

STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

**PETITION OF INDIANA-AMERICAN)
WATER COMPANY, INC. FOR)
AUTHORITY TO INCREASE ITS)
RATES AND CHARGES FOR WATER)
AND SEWER UTILITY SERVICE,)
FOR APPROVAL OF NEW)
SCHEDULES OF RATES AND)
CHARGES APPLICABLE)
THERE TO, FOR APPROVAL OF)
CHANGES TO RULES AND)
REGULATIONS APPLICABLE TO)
SUCH SERVICE, AND FOR)
AUTHORIZATION TO DEFER IN A)
PENSION/OPEB BALANCING)
ACCOUNT OVER- AND UNDER-)
RECOVERIES FOR PASS)
THROUGH TO CUSTOMERS)**

CAUSE NO. 43680

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MAS REPORT 2

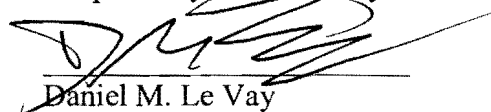
Vol. 2 of 3

VOLUME VI

THE INDIANA OFFICE OF UTILITY CONSUMER COUNSELOR

OCTOBER 27, 2009

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Microsoft
CERTIFIED
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Final Report
Volume II of III

Stratified Management & Operations Audit
of
Pennsylvania-American Water Company
for the
Pennsylvania Public Utility Commission
Bureau of Audits

Docket No. D-06MGT029

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VI. Corporate Governance

This chapter addresses the corporate governance policies, practices, and procedures of American Water Works Company, Inc. (American Water) and Pennsylvania-American Water Company (PAWC). It will also review American Water's adherence to the Sarbanes-Oxley Act of 2002 (SOX). Specifically, this chapter will review the makeup and activities of the Board of Directors (Board) and its committees, Board interfaces with external and internal auditors, and actions to comply with the spirit of the requirements of both the Sarbanes-Oxley Act of 2002 and the New York Stock Exchange (NYSE).

A. Background & Perspective

Publicly traded companies have long been subject to financial and disclosure laws and regulations (e.g., The Securities Exchange Act of 1934 and the Foreign Corrupt Practices Act, which among other conditions required companies to have internal controls). The financial and business community at large has been active in strengthening corporate governance principles through efforts such as the National Commission on Fraudulent Financial Reporting (Treadway Commission/Report) and the General Accounting Office. In 1998, the NYSE and the National Association of Securities Dealers (NASD) sponsored a committee known as the Blue Ribbon Committee that developed recommendations to improve the effectiveness of audit committees. Subsequently, NYSE, NASD, and the Securities and Exchange Commission (SEC) revised listing standards and developed new rules concerning the corporate governance roles of audit committees. Nevertheless, recent events surrounding several spectacular company collapses (e.g., Enron in 2001, and WorldCom and Global Crossing in 2002) and the allegations of misdeeds by corporate executives, independent auditors, and other market participants have undermined investor confidence in the U.S. financial markets. In response, Congress passed, and the President signed into law, the Sarbanes-Oxley (SOX) Act of 2002, which effected sweeping corporate disclosure and financial-reporting reform. This act directed the SEC to enact new rules to meet its intent. The SEC took and considered comments from interested parties and published the new rules in 2003. The most applicable sections of SOX as they apply to large, publicly traded corporations involve the following:

- ◆ Strengthening auditor independence
- ◆ Increasing the roles and responsibilities of the company auditing committees
- ◆ Requiring senior management to certify and otherwise be generally held responsible for the accuracy of financial statements
- ◆ Increasing the disclosure and transparency of financial information in quarterly and annual reports
- ◆ Enhancing company internal controls (to include the establishment of a code of ethics)

Although American Water is not publicly traded (and therefore not subject to SOX), the company has indicated that it intends to go public in the near future and is taking steps to become SOX compliant. Whether or not American Water becomes a public company, as it operates public utilities, it should incorporate appropriate corporate governance practices.

The American Water Board of Directors is responsible for corporate governance for American Water. The American Water Board consists of seven members: the President and CEO of American Water (inside), three senior managers of RWE (inside), and three outside, independent directors. The American Water Board has three committees: Audit, Compensation, and Nominating/Corporate Governance.

The Audit Committee and Nominating/Corporate Governance Committee have three directors (two outside, independent directors; one inside director), while the Compensation Committee has four directors (three outside, independent directors; one inside director). The Compensation Committee and Nominating/Corporate Governance Committee were formed in September 2007.

Corporate governance responsibilities lie primarily with the American Water Audit Committee and the American Water Nominating/Corporate Governance Committee.

The American Water Audit Committee is responsible for:

- ◆ Representing and assisting the Board as a whole in overseeing the adequacy, effectiveness, quality, and integrity of American Water's internal controls, financial statements, compliance with regulatory and legal requirements, independent auditor's qualifications and independence, and internal audit performance
- ◆ Appointing, compensating, retaining, terminating, and overseeing American Water's independent auditor
- ◆ Promulgating American Water's Code of Ethics and overseeing its enforcement
- ◆ Ensuring SEC required reports are included in American Water's annual proxy statement or annual report

Although the Audit Committee charter states that Internal Auditing reports directly to the Audit Committee, American Water organization charts show the Vice President of Internal Auditing reporting directly to American Water's Senior Vice President (Finance) and Chief Financial Officer. American Water's Director of Internal Controls reports to the Controller, who in turn reports to the Senior Vice President (SVP) and Chief Financial Officer (CFO).

The American Water Nominating/Corporate Governance Committee is responsible for:

- ◆ Identifying and evaluating potential members for the Board of Directors and recommending nominees to the full Board
- ◆ Developing and recommending to the Board of Directors corporate governance principles for

American Water, annually reviewing corporate governance guidelines, and recommending changes to the Board

- ◆ Recommending members to serve as Chair of the Board, committee chairs, and committee members to the full Board
- ◆ Overseeing an annual evaluation of the Board of Directors, committees of the Board of Directors, and executive management
- ◆ Reviewing the charters, composition, and performance of Board committees and recommending changes as appropriate
- ◆ Taking the leadership role in shaping corporate governance at American Water

The American Water Board delegates to the CEO the selection of directors for subsidiaries (which includes PAWC) or representatives serving on the Boards of any joint ventures. The subsidiary president must be consulted prior to naming subsidiary directors. Other governance responsibilities pertaining to PAWC are addressed by the PAWC Board as a whole.

PAWC is required by its bylaws to have a Board of Directors. The PAWC Board of Directors is broadly responsible for the direction and oversight of the company's management, and control of PAWC, to the extent prescribed by statute. In practice, the PAWC Board provides more detailed oversight on PAWC specific issues (e.g. real estate matters, PAWC-specific financial matters, operational matters, customer service matters, state-specific regulatory and communication matters), and acts as a conduit to ensure that PAWC is complying and coordinating with American Water corporate direction (e.g. SOX compliance, internal audits, external audits, issues management). The American Water and PAWC boards are separate. Currently, the Chairman of the American Water Board also serves on the PAWC Board (and chairs PAWC's Board Audit Committee).

The PAWC Board has seven directors, three of whom are outside/ independent. The PAWC Board has two committees: the Executive Committee (three members, no independents) and the Audit Committee (three members, all outside/independent). Two of the PAWC Audit Committee members have immaterial financial/vendor relationships with PAWC, both of which have been fully disclosed. The Executive Committee exists to exercise the powers of the PAWC Board of Directors in managing PAWC's routine and ordinary business affairs during intervals between regularly scheduled meetings. This responsibility includes appointing PAWC officers, determining questions of general policy, and authorizing contracts involving real property of less than \$500,000 per transaction. Executive Committee actions are reported to and approved by the Board of Directors at the Board's next regularly scheduled meeting. The PAWC Audit Committee provides an open avenue of communication between internal auditors, American Water and PAWC management, and the Audit Committee of the American Water Board of Directors. American Water's external auditor meets annually, in executive session, with the PAWC Audit Committee. The Chairman of the PAWC Audit Committee also sits on the American Water Audit Committee. The Chief Executive Officer (CEO) of American Water selects subsidiary Board members (in consultation with the subsidiary president). There are no guidelines restricting Board member service (e.g., retirement age, tenure). PAWC external Board members are paid an annual

retainer plus attendance fees. Internal Board members do not receive additional compensation for their Board participation.

The PAWC Audit Committee is responsible for:

- ◆ The adequacy and effectiveness of PAWC's system of internal controls
- ◆ The quality and integrity of PAWC's financial statements
- ◆ PAWC's compliance with legal and regulatory requirements
- ◆ The performance of PAWC's internal and external controls

The PAWC Board and its Audit Committee generally meet quarterly. The Executive Committee meets on an as-needed basis. In 2007, the PAWC Board and Audit Committee met three times.

American Water has an Internal Controls Group, which is led by a director who reports to the Vice President and Controller in the Finance Department. This group is responsible for developing and maintaining frameworks and processes to enhance internal controls, reporting on the design and effectiveness of internal controls, leading and supporting significant financial and operational compliance efforts, and providing a liaison with external auditors to support their assessment of internal controls. Documenting flow of transactions and significant control points in order to better determine where material misstatements could occur because of fraud or error is an important activity of this group. Besides the Director, there are two senior analysts, one devoted to Information Technology.

Over the past year, most of this group's work activities have been in support of enhancing internal controls in preparation to meet SOX requirements (Sections 302 and 404). This significant effort (with assistance from outside consultants Ernst & Young) is almost complete.

B. Findings & Conclusions

Finding VI-1 The review, selection, and compensation of American Water's Board are appropriate.

American Water's Board consists of seven directors, of whom only three are outside (independent) directors. Of the other four (none of whom are independent), three of the directors work for American Water's owner, RWE, while the American Water President and CEO is the only inside company director. SOX requires that a majority of the Board's members be independent and that all members of the Audit Committee be independent. American Water is taking steps to comply with those requirements as discussed in the next paragraph. All directors have senior-level management experience in water company operations, financial/banking, legal, and government administration. The Board is well educated, with most members having advanced degrees and all Board members having educational backgrounds suitable to their responsibilities. At least four Board members (two of whom are independent) have extensive financial expertise. The three committees are composed, in the majority, of

independent directors, with two independent directors serving on two committees and one independent director serving on three committees. The two independent directors on the Audit Committee have served on that committee for over four years.

American Water has indicated that the Board will be expanded by at least three more independent directors, bringing the total up to ten, once American Water goes public. If RWE maintains a percentage ownership after the public offering (e.g., 50%), it intends to maintain a relative portion of the number of directors (e.g. three directors). As its percentage of ownership declines, RWE may decrease its number of directors accordingly (to be replaced by independent directors). American Water presently contemplates that once RWE divests all ownership in American Water, the Board will consist of nine independent directors and one inside director (CEO). Also, once American Water goes public, the Board Audit Committee will have one year to ensure that all members of the Board Audit Committee will be independent directors.

American Water's director-selection policies and practices are formally specified in the American Water Works Company, Inc. Corporate Governance Guidelines documentation. Personal criteria for Board members include:

1. Ethics, integrity, and no conflicts of interest
2. Accountability
3. Judgment
4. Responsibility and ability to interact with other directors in an open, challenging, and informed manner
5. High performance standards
6. Commitment and enthusiasm toward their responsibilities as directors
7. Courage to express their views openly, even in the face of opposition
8. Willingness to devote their time and energy toward carrying out Board duties and responsibilities

Board members must also be able to read and understand financial statements and information to evaluate the financial performance of American Water and its subsidiary companies. The newly formed Nomination/Corporate Governance Committee will be responsible for recruiting and selecting new directors.

Directors currently serve until death, resignation, or removal, but American Water has indicated that once it goes public, directors will be elected annually. There are no plans to classify the Board.

Finding VI-2 American Water has adopted a substantive Code of Ethics document; however, the Code does not explicitly apply to all contractors and vendors who do business with American Water.

SOX/NYSE requires public companies to adopt a Code of Ethics that applies to directors, officers, and employees (or to disclose an explanation of why it has not adopted such a code).

In July 2006, American Water updated its corporate Code of Ethics (previously version dated 2001) to include policy components required by the NYSE rules and SOX. This document was reviewed and approved by the Board of Directors. It is concise, easy to read, and includes major sections dealing with the following areas:

- ◆ *Basic Standards* – who is covered, importance of accepting personal responsibility, defined standards of personal conduct
- ◆ *Conflicts of Interest* – includes what is considered a significant relationship, use of proprietary information or financial interests, and loans to directors and executive officers (prohibited), employees serving as outside directorships, accepting and giving business gifts, and accepting entertainment
- ◆ *Fair Dealing* – with customers, vendors, competitors, and outside publics
- ◆ *Handling Sensitive Information* – safeguarding and using what constitutes non-public, insider information; also includes a discussion on cooperating with legal proceedings and investigations
- ◆ *Safeguarding Financial Records and Controls* – ensuring accuracy and completeness
- ◆ *Government Relations* – dealing with public officials, political contributions, and involvement in political campaigns and political action committees
- ◆ *Conduct in the Workplace* – equal opportunity, affirmative action, prohibitions against harassment, health and safety, and illegal substances and alcohol, use of American Water resources, and respecting the privacy of customers
- ◆ *Administration* – where and how to report violations, no retaliation policy, and responsibilities for maintaining ethics policies

A confidential ethics hotline has been established and is operated by an outside agency, which maintains records on all calls, investigations, and resolutions. All allegations of wrongdoing, even if reported up through management, must be submitted to the hotline. As such, the hotline is the central repository of all allegations of ethical violations.

To assist with compliance, American Water has established an Ethics Committee consisting of the Chief Financial Officer (CFO), the Chief Operating Officer (COO), the Senior Vice President (SVP) of Human Resources, the Vice President (VP) of Internal Audit, and the General Counsel. This committee has the responsibility and authority to define and interpret principles in the Code, and to ensure consistent application and overall compliance (management still has responsibility for code compliance).

The American Water Board of Directors has ultimate oversight of this policy. The Ethics Committee reviews allegations from the hotline and reports results to the Board's Audit Committee. The Audit Committee has the authority to hire outside expertise to investigate any allegation or incident.

All employees and directors are required annually to sign a Code of Ethics Acknowledgement form indicating that they have received and read the American Water Code of Ethics and that they are not aware of any violations of that code. This form also requires disclosure of any possible exceptions.

Although the Code addresses employees' ethical behavior with contractors and vendors (and even suggests that they make a copy of the Code available to them), there are no requirements for outside contractors or vendors to abide by, or at least acknowledge, American Water's Code of Ethics.

Finding VI-3 Board compensation appears to be appropriate; however, American Water has not recently reviewed Board compensation and has delayed the recruitment of new independent directors.

Non-management members of the Board of Directors receive compensation based on an annual retainer and per-meeting fees. The annual compensation of a non-management American Water Board member is between \$50,000 and \$60,000 a year. Inside Board members receive no fees or additional benefits beyond their company compensation.

Currently, there are no other forms of compensation (e.g., non-cash compensation), although the draft Corporate Governance Guidelines provide for the Compensation Committee and the Board to at least annually review the compensation level of directors in comparison to directors of like corporations. As of January, 2008 there has been no review of Board compensation levels. (The issue is whether director compensation levels are adequate enough, in the post SOX era, to attract qualified candidates.) These guidelines also provide for/encourage, but do not require, stock ownership as a part of a director's compensation or as a condition of Board service. Pension benefits will not be a part of an independent director's compensation.

American Water has indicated that it intends to expand the Board to 10 total members and replace RWE representatives on the Board with independent directors (as RWE's ownership stake decreases). This intention means that American Water will have to recruit up to six independent directors (more if any of the three current independent directors leaves the Board). SOX has placed a greater workload and added responsibilities on public company Boards, and the competition for qualified directors has increased over the past few years. In anticipation of SOX, the American Water Board has recently established a Nominating/Corporate Governance Committee whose responsibilities include recruiting qualified directors, deciding on director compensation, and determining the number, structure, and independence of Board committees. To date, no director compensation surveys have been conducted or contracted for by American Water.

When RWE decided in 2006 to take American Water public, recruiting efforts began for adding independent directors. When RWE decided in 2007 to delay the public offering, this effort was put on

hold. American Water plans to resume this effort in time to add additional directors after the company finally goes public.

Finding VI-4 The American Water Board maintains adequate oversight and is taking further steps to increase its role in ensuring proper controls.

American Water's full Board met five times in 2006 (one special meeting to address compensation issues) and eight times in 2007. In addition to receiving and discussing Audit Committee reports and approving key recommendations (e.g., external auditor's fees and work plans including discussion of audit and non-audit work, internal audit work plans, and audits of interest, internal controls), the Board addressed a wide range of policy-level issues. These issues included efforts to comply with SOX and SEC requirements (for public companies) and associated compliance programs, executive development, succession and compensation, business plans and performance, and various financial and operational issues. Specifically, the Board addressed the process for selecting additional directors in anticipation of the public offering, thereby establishing Corporate Guidelines and additional Board proposals to address American Water's strategic planning needs after the public offering, and for future External Communication strategies. The Board met frequently in executive session with external auditors, internal auditors, and other American Water management as needed.

American Water has also recently developed Corporate Governance Guidelines that define principles by which the Board of directors will organize and execute its responsibilities. This includes sections on General Principles (commitment of time and effort, carrying out duties with due care, loyalty and good faith, ability to read and understand financial statements, and personal characteristics), director qualification standards (qualifications and selection of directors, independence and added independence standards for directors on the Audit Committee), Board committees (number, structure, independence, and responsibilities), director access to management, employees, and independent advisors (including funding authority for independent advisors), director compensation, director orientation and continuing education, management succession and development, internal audit (including the requirement that the Director of Internal Audit report directly to the Board), and Code of Ethics. This document closely matches SOX/SEC and NYSE requirements and gives the Board appropriate direction and governance authority. As mentioned earlier, this document has just been developed and the Board has not been able to implement all of its features.

American Water has a stated Policy on Authorization and Limitation of Corporate Authority (adopted by the American Water Board of Directors, last amended in February 2007), which establishes uniform standards for conferring, limiting, and delegating the authority to enter into corporate transactions on behalf of American Water. This policy gives specific authorizations to the CEO, broken down by various types of transactions. The monies for these transactions must be within a Board-approved budget or business plan. This policy also contains specific transactions that only the Board can approve (e.g., political contributions).

The PAWC Board met five times in 2006 and three times in 2007. In addition to reviewing updates on important corporate-wide activities (e.g., internal audits specific to PAWC, SOX and other compliance efforts, costs of and coordination with external auditors), its members addressed important local operational issues (e.g., main breaks) and local real estate transactions.

Finding VI-5 American Water is taking steps to strengthen oversight through the Audit and Corporate Governance Committees.

The NYSE Blue Ribbon Committee laid out a number of requirements concerning Board Audit Committees, which include:

- ◆ Publishing formal, written charters
- ◆ Requiring that outside auditors to be accountable directly to the Board and that the Audit Committee, which nominates, hires, and fires the auditor and company management, not be in that reporting line
- ◆ Bringing outside and internal auditors into the same line of communication
- ◆ Having outside auditors discuss with the Audit Committee the quality of American Water's accounting principles (e.g., process used by management in formulating particularly sensitive accounting estimates)
- ◆ Ensuring the Audit Committee doesn't become overloaded with duties

American Water's Audit Committee has a documented charter that clearly covers the purpose and roles of the committee, and its structure and operations. This charter includes the composition of the committee and the qualifications of its members, the appointment and removal of members, and the designation and responsibilities of the Committee Chairman. The charter further requires the committee to meet at least quarterly (more frequently as required) and to do so in private session (no other American Water management present) with the independent auditor, the internal auditor, the General Counsel, and the Chief Compliance Officer. Responsibilities and duties are detailed and include matters concerning the independent auditor (including discussing issues regarding accounting principles), the internal auditor, ethics, risk and control environment, and legal, systems, technology, and security issues that may impact financial controls. The committee has full authority and resources to carry out its duties. For example, the committee has the authority and budget to hire outside expertise at its sole discretion.

The issue of Audit Committee overwork has been addressed by the recent (September 2007) creation of two additional committees: the Compensation Committee and the Nominating/Corporate Governance Committee. Both of these committees have formal charters (similar in form and type of information found in the Audit Committee Charter) that define their responsibilities. The Compensation Committee includes among its responsibilities an annual review of director compensation (formally performed by the Audit Committee). The Nominating/Corporate Governance Committee is responsible for developing and maintaining American Water's Corporate Governance Guidelines (i.e., principles by

which the Board of Directors will organize and execute its responsibilities). This committee also has responsibilities of ensuring that directors are not overcommitted by serving on more than two other boards, considering questions of director independence, overseeing a director continuing-education program, and, among other duties, carrying out any additional functions and adopting policies and procedures in light of changing business, legislative, regulatory, legal, or other conditions. Overall, this committee takes the lead in shaping American Water's corporate governance, thereby leaving the Audit Committee to focus on financial control issues.

The American Water Audit Committee met eight times in 2006 and eight times in 2007 (PAWC Audit Committee met three times in 2007). It fully addressed a variety of issues including financial audits (inclusive of audit and non-audit work of the external auditors), internal audits, Code of Ethics, SOX compliance, American Water financial statements, Committee Charters and Corporate Guidelines, management compensation and succession, among other items (including changes in financial and governance requirements). The PAWC Audit Committee addressed internal audit issues, financial statements and management, audit fees, and provided updates and coordination on American Water governance efforts (e.g. SOX, internal controls, ethics). There are no minutes available for the Compensation Committee or the Nominating/Corporate Governance Committees (which have only recently been formed).

Finding VI-6 The Board exercises appropriate control over the external auditors; however, a process has not been established to ensure that cost comparisons for external audit services are performed on a periodic basis.

The American Water Board's Audit Committee meets quarterly with the external auditors. This meeting includes time in executive session. Recurring items include reviews of annual and quarterly financial statements, Board approval of audits and expenses, review of external audit work plans, discussions of issues related to internal controls and accounting principles, new accounting and financial-reporting requirements, reports on audit and non-audit fees, and various other financial issues (e.g., tax, impairments). During every meeting, the Audit Committee meets in executive session with the external auditors.

PricewaterhouseCoopers LLC (PwC) has been the external auditors for American Water and its subsidiary companies for the past five years. American Water requires external audit partners to rotate every five years (as per SOX/SEC requirements), but it does not proactively compare costs for external audit services on a periodic basis.

Finding VI-7 The Internal Audit Department has adequate interaction with the American Water Board Audit Committee, but its reporting relationship to the American Water Board Audit Committee and American Water management is unclear.

SOX/SEC/NYSE rules recognize the importance of Internal Auditing's independence from management pressure and have expressed that the internal auditor should have a direct-line reporting relationship with the Board of Directors (Audit Committee). SOX/SEC rules stop short of mandating that this relationship include administrative reporting, although they could still bring pressure to bear on the internal auditor.

American Water's internal audit function has a high level of visibility with the American Water Board Audit Committee. The VP of Internal Audit meets with the Audit Committee once a quarter, and minutes of those meetings reflect regular and consistent internal audit reports and executive sessions with the committee. At each meeting, Audit Committee members are presented results of audit plans and significant findings of audits to date, analysis of open audit items, the status of internal audit SOX activities, audit staff overview, and special management requests. This information package also highlights any recommended actions not completed in a timely fashion and includes a required explanation by the responsible functional manager.

The American Water Audit Committee Charter states that Internal Audit reports directly to the Audit Committee, while reporting administratively to the Chief Executive Officer. Organization charts show the VP of Internal Audit reporting directly to the CFO. In practice, American Water's VP of Internal Audit reports to the CFO with a dotted-line reporting relationship to the CEO and the Chair of the American Water Board Audit Committee. As discussed in *Chapter III – Financial Management*, the CFO prepares the performance review for VP of Internal Audit. This performance review is then reviewed by the CEO and the Chair of the Audit Committee. The CFO also authorizes the VP of Internal Audit's personal leave and approves Internal Audit staffing levels, the speed of replacements, and internal auditor pay-grade levels, which effectively impacts the department resource levels. The CFO does not direct the internal audit work effort nor does she approve audit projects, although she does have input into the audit planning process. This chain of command appears to place the Internal Audit function at least in part under the CFO, who is responsible for all the financial operations of American Water, including PAWC.

Finding VI-8 American Water is taking substantive steps to comply with SOX/NYSE requirements for internal controls.

The three main parts of SOX/SEC specifying requirements for compliance that are most applicable to American Water/PAWC are:

- ◆ *Section 302* establishes corporate responsibility for security reports. The CEO and CFO must prepare a statement that certifies financial statements and disclosures.

- ◆ *Section 404* establishes the need to assess internal controls. An internal control report must accompany an annual report, with management taking responsibility for and assessing the effectiveness of internal controls.
- ◆ *Section 409* requires real-time disclosure of security issues. Material changes affecting financial disclosures must be reported on a rapid and current basis.

SOX also requires attorneys who represent issuers before the SEC to report any evidence of wrongdoing to management up through the Chief Legal Officer and the Board.

American Water has embarked on a major effort to strengthen internal controls to comply with *Section 302* and *Section 404* of SOX. It has done so by designing an internal-control assessment process that will be subjected to American Water's independent, registered public accounting firm's evaluation under Public Company Accounting Oversight Board (PCAOB) *Standard No. 2* and its current and prospective interpretations and amendments. The American Water effort uses company and outside consulting expertise. This effort is being conducted in four stages as follows:

- ◆ *Stage One* – Develop and document a methodology and framework to complete the SOX requirements.
- ◆ *Stage Two* – Document key controls and transactional flows, assess their design and effectiveness, pinpoint necessary improvements, identify testing and tracking processes, and develop a framework and processes for follow-up as well as a framework and standards for the quarterly sub-certification process.
- ◆ *Stage Three* – Implement testing strategies, updates to process documentations, design remediation plans, and tracking of control issues and recommendations.
- ◆ *Stage Four* – Develop ongoing project-status reporting, quality-control review processes, methods for incorporating leading practices and new issues, and updating of all designed processes.

As noted earlier, the American Water Board of Directors has given considerable attention to the efforts to meet SOX/SEC requirements. American Water has taken a number of steps to enhance business practices so they comply with SOX. A policy panel has been established to guide an effort toward updating all policies and practices, both SOX and non-SOX. As mentioned earlier, American Water has embarked (with outside assistance) on a major effort to identify and enhance internal controls so they comply with sections 302 and 404 of SOX. A SOX Steering Committee and a Deficiency Committee consisting of senior management has been monitoring the compliance efforts mentioned above. Key Control points have been identified throughout the American Water system and upgraded controls are being implemented and tracked. This process is close to completion.

American Water, through its Internal Control group, has undertaken a number of company-wide training efforts on both SOX and the changes coming from compliance with these new requirements. These initiatives include:

- ◆ *Control Road Shows* – location-based group meetings with designated process owners and others led by a representative of the Internal Control group and the respective president (or designee). These meetings provide updates on the SOX program, new internal controls, new systems for monitoring and implementing SOX, and other relevant information (e.g., highlights of information technology considerations).
- ◆ *SOX University* – ongoing program of conference calls with process owners and others to deliver process-based risk and control information. Process owners are then expected to hold similar meetings with other employees.
- ◆ *Movaris SOX Tool* – a series of meetings and presentations on conducting internal control activities (e.g., evaluations) and the systematic tools used to document these evaluations.

C. Recommendations

Recommendation VI-1 Require contractors, vendors, and others doing business with American Water to conduct themselves ethically when dealing with American Water entities. (Refer to Finding VI-2.)

This requirement for ethical (not just lawful) conduct can be stated in requests for proposals/bids and in contracts or other governing documents. If someone doing business with American Water already has a Code of Ethics, then it should also be provided to American Water as part of any contractual agreement. Regardless, copies of American Water's Code of Ethics can either be made available to vendors or vendors can be referred to the company Web site. In this manner, American Water will clearly indicate to all who do business with the company that American Water takes ethical conduct seriously and also that ethical violations will not be tolerated. Implementation does not necessarily require American Water to specifically audit for compliance, but provides the company with a mechanism to terminate the relationship if subsequently it finds that one of these entities has not complied with ethics requirements.

Recommendation VI-2 Expand the American Water Board in anticipation of going public and review Board compensation as soon as possible. (Refer to Finding VI-3.)

American Water has indicated it will expand its Board to 10 members when it goes public, but as of late 2007 the initial public offering date had been delayed. Nonetheless, as plans to issue the IPO have not changed, American Water should continue its recruiting efforts and bring on qualified directors when they are identified rather than waiting until the company goes public. RWE's percentage of representation on the American Water Board should decline in proportion as their percentage of ownership declines.

Although SOX (and the American Water Corporate Governance Guidelines) only requires that the majority of the Board be independent, American Water should ensure (and state its preference) that the Board is substantially independent (e.g., eight or nine of the 10 directors should be independent). Also, the Nominating Committee should continue director recruiting efforts after the Board reaches 10 members with the anticipation of replacing RWE directors as RWE reduces its ownership stake. The Board can temporarily be increased to above 10 directors if needed.

The newly created Board Compensation Committee is tasked with the responsibility of reviewing Board compensation. Board compensation studies are readily available through Human Resources and executive recruiting firms. Because American Water will require up to six new independent Board members in the short term and because the market for qualified directors is getting more competitive, determining appropriate director compensation should be a high priority. Director compensation should require and include significant stock ownership (addressed, but not clearly defined in the Compensation Committee charter) and should not include any pension or like benefits.

Recommendation VI-3 Implement a process to periodically perform cost comparisons for external audit services. (Refer to Finding VI-6.)

This formal effort could be conducted every five years to correspond with the SOX-required changing of external audit managing partners (responsible for the American Water account). Competitive bidding is a vehicle to ensure high-quality services (e.g., oversight) at the best overall value. It is also a way of encouraging fresh and more independent reviews/points of view.

Recommendation VI-4 Modify the Internal Audit Department reporting structure so that it no longer administratively reports to the American Water CFO. (Refer to Finding VI-7 and Finding III-8.)

American Water should establish an organizational reporting relationship that results in the Internal Audit Department reporting functionally to the American Water Board Audit Committee (reflecting the Audit Committee Charter) and administratively to either an American Water officer other than the CFO or through a governance organization that reports directly to the Board. This reporting relationship will further ensure the independence of American Water's Internal Audit function and enable it to be truly independent of the financial and operational management of PAWC and AWWSC. This independence is necessary for perception as well as management and internal control purposes.

VII. Corporate Culture, Management Structure, and Staffing Levels

This chapter examines the effects of the 2003 RWE acquisition of American Water with respect to corporate culture, management structure, and staffing levels. More specifically, we will discuss the effect of these changes on Pennsylvania-American Water Company's (PAWC's) operations. Finally, we will give consideration to the impact on the divestiture from RWE and on the planned redirection of PAWC.

A. Background & Perspective

Corporate culture is most easily understood as *the way things are done*. These ways of doing things are, intentionally or unintentionally, taught to employees, thereby yielding a consistent and observable pattern of organizational behavior. The culture of an organization may support or detract from an organization's performance. Many of today's most successful organizations make conscious efforts to shape their organizational culture through mission statements, explicit values, company policies, employee education, organizational assessments, individual performance management, and leadership practices.

PAWC's culture is a function of many variables, but perhaps the most significant effects are related to company history and changes in ownership. The entities that came to comprise the American Water Works Company originally consisted of more than a hundred small, local water companies, created for the most part between 1870 and the late 1920s. Over time, these local systems were consolidated into a few dozen larger companies. These, in turn, were gathered into a handful of multi-system holding companies, which finally were combined through acquisition or merger to create the company in its present form. The forces that brought these companies into being and the problems that beset their early days are not merely typical of hundreds of other companies started then or since, but they reflect the essential realities—social, political, financial—of running a community water business to this day.

Multiple Reorganizations

In November 2003, American Water Works Company (American Water) announced a system-wide restructuring. This reorganization resulted in American Water's existing seven regions being consolidated into four regions. PAWC was one of American Water's six regulated subsidiaries that became part of the Southeast Region. The PAWC President assumed the additional role of managing director of the Southeast Region. Eventually, he was replaced by a new President of the Southeast Region and the PAWC President position was combined with the role of Southeast Region President. The PAWC corporate office in Hershey, Pennsylvania, also became the headquarters of the Southeast

Region, which included the states of Kentucky, Maryland, Pennsylvania, Tennessee, Virginia, and West Virginia.

This restructuring was driven by four key objectives:

1. Create a greater customer service and performance culture
2. Accelerate business growth
3. Develop common processes to continue to enhance standards
4. Pursue efficiency while maintaining operational integrity
5. This restructuring process occurred in four phases. Phase 1 was announced on November 19, 2003. Phase 4 was announced on April 28, 2004. The restructuring and reassignment of employees appears to have been largely complete by mid-July 2004.

A major element of this restructuring was the redeployment of management personnel. Managers were required to bid for a position within the new structure and, in some cases, to rebid for their own jobs. This process included all levels of management, including first-line supervision and other exempt professional and non-management employees. Managers completed an assessment center process that was designed to assess an individual's skills, knowledge, and experience against required competencies for the newly designed roles. The assessment process varied depending on the specific role. American Water utilized two outside firms to conduct these assessments. Personnel Decisions International (PDI) was engaged to conduct senior management assessments, with a focus on leadership behaviors. Phase 4 assessments focused more on technical and professional roles and were conducted by a firm with not only experience in this area but also the capacity to handle a high volume of assessments. Both vendors had worked previously with RWE on assessments for recruitment, selection, and development purposes.

During this reorganization, virtually all management and professional positions were redefined using the RWE competency model. Positions were reviewed between November 2003 and July 2004 as part of the RWE organizational restructuring. Positions that were not redefined were not posted, but all redefined positions were posted internally, and all American Water employees had an opportunity to apply for any posted position. Many employees applied for more than one position. Employees who did not wish to apply for one of the posted positions were offered an enhanced severance package, as were employees who applied for a new position but were not selected.

After internal applications were received, a short list of candidates was selected for consideration; candidates were assessed, and the decision to select internal candidates was made. If no internal candidate was deemed acceptable for a particular role, that role was advertised externally.

The review occurred in four phases, beginning with direct reports to the President & CEO of American Water. PAWC positions were included in Phase 3 (primarily manager titles) and Phase 4 (superintendents, supervisors, and other exempt professional and technical employees). The overall objectives of the review were to:

- ◆ Position the right people in the right roles
- ◆ Conduct an open, fair, and robust selection process
- ◆ Position the business to deliver the 2004–2008 business plan
- ◆ Complete the management organization structure by the end of July 2004
- ◆ Maintain organization and culture change momentum

Personnel Decisions International conducted the assessments for Phases 1, 2, and 3. These assessments were conducted at PDI offices in various locations throughout the United States. External candidates who applied for one for these positions were also required to participate in the assessment process. SHL performed the assessments for Phase 4, in concert with trained company interviewers. These assessments occurred at company sites.

American Water sought a process that was objective, transparent, fair, and open. It was designed to review an individual's skills, knowledge, experience, and behavioral attributes for the role(s) for which they applied, based on the critical behavioral competencies for that particular job cluster. Key elements of the PDI assessment included:

- ◆ A structured interview
- ◆ A series of business simulations
- ◆ Standardized tests of cognitive thinking skills
- ◆ A personality questionnaire
- ◆ Feedback on individual performance

Key elements of the SHL assessment process included:

- ◆ Completion of an Occupational Personality Questionnaire that linked to the American Water competencies being evaluated
- ◆ A competency-based interview with a panel composed of both SHL and American Water staff
- ◆ Analytical problem-solving
- ◆ Depending on the specific position, additional job-related tests

About 1,800 management and supervisory positions were affected by the restructuring. Originally, American Water sought to reduce the number of its management positions by 350, or approximately 20% of management and supervision. In Phase 4 of the restructuring, that number was reduced to approximately 300, reflecting the need to maintain operational reliability and integrity. The American Water President recognized that, as a result, “some good people will be leaving our company.” A total of 214 PAWC employees applied for 193 advertised positions. Of those who were not selected for a posted position, some were terminated and some remained in their (non-posted—i.e., hourly) existing positions. A total of 39 PAWC employees were terminated with enhanced severance at the conclusion of the process. Those terminated included individuals who chose not to apply for a position, individuals who were offered a position that would require relocation and declined that position, and individuals

who were not offered a position. All 193 PAWC positions were ultimately filled, whether by internal or external candidates.

Exhibit VII-1 lists positions and the number of PAWC employees in each position affected by the restructuring.

Exhibit VII-1
PAWC Positions Subject to Reorganization
as of April 2004

Job Title	Number of Positions
Associate General Counsel	2
Business Development Manager	4
Communications & CSR Manager	3
Engineering Technician (Senior)	1
Financial Analyst (Senior)	1
Financial Analyst	2
Government & Regulatory Affairs Manager	1
Human Resources (HR) Manager	2
Human Resources Generalist	1
Lab Analyst	3
Loss Control Manager	2
Loss Control Specialist	2
Maintenance Manager (Large)	1
Maintenance Supervisor	7
Network/Field Services Manager	2
Network/Field Services Superintendent	10
Network/Field Services Supervisor	86
Non-Revenue Water Supervisor	3
Operations Engineer (Senior)	3
Operations Specialist/CAD	2
Planning Engineer (Senior)	1
Project Delivery & Developer Services Manager	2
Project Manager (Senior)	9
Production Manager	2
Production Superintendent	5
Production Supervisor	23
Training & Development Manager	1
Water Quality Manager	3
Water Quality Supervisor	9
Total	193

Source: Information Response 822

On July 31, 2006, American Water's Chief Operating Officer announced a reorganization of the company aimed at strengthening the state president/general manager role across American Water, while maintaining the regional organization.

On June 15, 2007, he announced that the company had hired a new PAWC President. Later that month, on June 29, American Water's President announced that American Water would begin the process of eliminating the four regions created in 2003 and transition those regions to two divisions. PAWC would become part of the Eastern Division, and each state within the division would be headed by a state president. This reorganization sought to return American Water to a more state-focused organization by restoring the full-time position of PAWC President and changing roles so that many former regional or functional positions are now PAWC positions that report to the PAWC President.

Performance Management

PAWC has a comprehensive annual-planning and performance-management process that is linked to overall corporate objectives and leadership competencies. American Water company-wide performance targets are announced in January. Concurrent with this announcement is the setting of regional and functional performance targets related to the corporate objectives. During January and February, employee performance is evaluated against the prior year's objectives as well as new departmental and individual performance targets for the coming year. These comparative results are expected to be consistent with the regional/functional targets.

Performance targets are organized in a common "balanced scorecard" format. Throughout American Water, performance targets are related to one of four categories: Finance, Customer, Process, and Employee Development.

Management performance is also evaluated against a set of corporate behavioral competencies that outline standards for leadership behavior and reflect American Water company values. These competencies are defined in a "competency dictionary" that helps guide the selection process, evaluation, and manager development.

A final step in the performance-planning and evaluation process is the setting of individual development plans. The first component is specific development activities related to behavioral competencies. These activities are listing of actions—such as self-study, company-sponsored training, and on-the-job assignments—that are aimed at improving individual performance. Employees also complete career development plans that include learning and job-experience activities related to career and professional development growth. None of these activities is related to a formal leadership-development process. (See *Finding VII-5*.) In March of each year, merit pay increases are set based on individual performance evaluations.

B. Findings & Conclusions

Finding VII-1 PAWC's culture under RWE could best be defined as *insular*.

Under the reorganization begun in 2003, American Water fundamentally altered its relationship with end customers, communities, regulators, and other key stakeholders. Local utility organizations were to be focused on delivering service, influencing regulators, and shaping the market. These local utility organizations were functionally designed and were expected to adopt common ways of working. The American Water Works Service Company (AWWSC) was designed to serve the regions, beginning with the announcement of the American Water Executive Team, and to provide strategy, policy, and governance. The regional organization (Southeast Region is now part of the Eastern Division) was intended to serve its customers, which were the operating companies, who in turn served the end customers.

The reorganization appears to not have fully realized its objectives. Under RWE, PAWC has had less presence at the Pennsylvania Public Utility Commission. We are unclear as to how the Southeast Region organization has served customers. In fact, the primary point of customer contact is now the national call centers in Pensacola, FL and, to a lesser degree for Pennsylvania, Alton, IL. (See *Chapter X – Customer Service*.)

PAWC is clearly operationally focused. (See *Chapter V – Water Operations*.) We do not find fault with a focus on strong operations, but at PAWC, such focus appears to have been accomplished without robust relationships with external stakeholders.

The company appears to recognize the problem. The July 31, 2006 reorganization had the explicit purpose to increase the company's external focus. The PAWC President, who was recently appointed in the middle of 2007, was hired, in part, to address this deficiency and has expressed the need to reshape the culture of the organization and make it more externally focused.

Finding VII-2 PAWC, like American Water, operates various systems with substantial differences in how each entity is run with respect to certain fundamental business processes.

From American Water's beginnings, one of its driving factors was to provide a central organization to allow greater access to capital markets and centralized engineering expertise that predecessor smaller water organizations were incapable of obtaining as independent entities unaffiliated with American Water. Throughout its history, American Water continued to operate in this manner. Only recently has this begun to change. Beginning in late 2003 American Water began to consolidate the various water companies into common larger organizations (as discussed in the *Background & Perspectives* section of this chapter). However, there are still many different systems located within the various operating water companies that, although they serve the same business function, have different business processes, often for historical reasons. For example, several of the systems within PAWC were previously part of

Citizens Utilities, which was not only non-union but also had different business processes that PAWC management has allowed to continue to exist.

While there are benefits to this flexibility (such as the differing work schedules that have been established, based on employee input, at various water production facilities), there are even greater benefits to identifying and adopting best operating practices as common business processes across all of the water systems. For instance, there are several different leak tracking databases in existence within PAWC. Specifically, a separate Microsoft Access database is in existence in the Wilkes-Barre/ Scranton water systems, different Microsoft Access databases (programmed to provide similar yet different business processes) in the Western PA water districts, and a third rough application that has been recently put forth by the Best Operating Practices group, which is currently not being used anywhere within PAWC – but is being considered as a model for a future system. Several other examples are provided in *Chapter XII Phase – III – Water Operations*.

Furthermore, as discussed in *Chapter IV – Support Services*, inventory maintenance and control is inconsistent across the PAWC storerooms and the control of inventory was observed to cover the range from inadequate to sufficient. Observation at several storerooms by Schumaker & Company consultants found that adherence to the above tenets was very inconsistent. While some of the storerooms appeared to have a reasonable level of inventory control, others were seriously lacking in this regard. Much of this problem is the result of a lack of proper, standardized inventory-control procedures, deficiencies in the training of the storekeepers, and a seriously deficient materials management computer system. Several other examples are provided in *Chapter IV – Support Services*.

Finding VII-3 Divestiture from RWE presents a significant opportunity to refocus American Water and to strengthen PAWC by leveraging best practices across the enterprise.

While a case may be made that global manufacturing enterprises create enormous efficiencies and strengthen global market penetration, it is difficult to make the same case for the regulated water utility industry. Throughout our investigations, Schumaker & Company has found no evidence that foreign ownership strengthened American Water or improved service quality for ratepayers.

With divestiture from a foreign parent, American Water in general, and PAWC in particular, has the opportunity to create a high-performing culture that is oriented toward operational excellence and customer service. We would expect American Water and PAWC to be more responsive to state regulators, U.S. shareholders, and local stakeholder interests. In addition, PAWC can benefit from the implementation of company best practices and not be required to implement management practices dictated by a foreign parent that operates in a distinctly different culture. Finally, divestiture presents greater opportunity for reinvestment in infrastructure, service improvements, and growth.

Finding VII-4 PAWC has not surveyed its employees since 2003 and has no current data on employee attitudes, management practices, and other key elements of corporate culture.

The last time American Water conducted a comprehensive employee survey was in 2003—about the time of the RWE acquisition. This comprehensive survey was followed by an abbreviated “pulse” (sample) survey in 2004. The 2004 “pulse” survey was not Pennsylvania specific. A great deal has transpired in the company since then, including widespread management changes, multiple reorganizations, and now the pending divestiture. Yet the company has no reliable indication of employee attitudes, management practices, and corporate culture.

Having current and reliable information on employee attitudes, management practices, and corporate culture is critical to understanding and managing corporate culture. When Schumaker & Company requested corporate culture indicators for the last five years from PAWC, we were given the response data from selected items from the 2003 and 2004 employee surveys. Such a response suggests that American Water agrees on the importance of these indicators but also confirms that no other more current indicators exist.

Given the importance of employee survey data and the significant changes American Water is undergoing, we would expect the gathering of such information to be a priority for the company. In 2007, it appears that there was no senior management support for a survey and resources were not allocated for one. American Water has said it plans to issue an RFP for a survey in 2008, but as of December 2007, no project plan for implementation had been developed.

Updated responses from American Water indicate that a comprehensive employee survey is planned for September 2008 and a smaller “pulse” survey for 2009. The statement of work with the survey vendor did not include a timeline for the project. As of March 13, 2008, the agreement with the survey vendor had not been finalized and no timeline was provided with our request for an update.

Finding VII-5 PAWC does not have a management development process.

Leadership defines corporate culture. Over the last 20 years, many of the most successful companies have made substantial commitments to management and leadership development. These programs strengthen management skills and align management practices to corporate values. They are seen as crucial to developing a strong and effective corporate culture.

During 2004 and 2005, PAWC offered a management development program called License to Manage. This program was selected because it supported the identified managerial competencies and balanced scorecard metrics. It consisted of 10 modules:

1. *License to Manage Introduction* – designed to give an overview, to provide a business context for the program (balanced scorecard, performance management, etc.), and to create an understanding of organizational behaviors, including intercultural sensitivity, people development, team-working, interpersonal communication, and performance management.
2. *Leading Change* – designed to assist the leaders of the organization in adapting to a changing workplace through commitment and involvement. Participants will explore the many effects of change and how it impacts the individual, the teams, and the organization.
3. *Employee Relations* – a program that allows managers to gain knowledge and insight on the fundamental employment laws, labor-relations processes, interviewing techniques, and management of a union workforce.
4. *Working in a Diverse Team Environment* – helps managers realize the impact that today’s changing demographics have on the workplace, understand the connection between diversity and their organization’s present and future success, and realize the important role they play as change agents in helping to create a workplace in which people of all cultures and backgrounds have a chance to succeed.
5. *Coaching* – focuses on conflict management styles and coaching steps. Managers will participate in a series of activities to learn the coaching fundamentals, including conflict resolution, good decision-making, anticipation of obstacles, motivation of employees, and personal assessment of leadership and communication styles.
6. *Building a Strong Team* – designed to provide an understanding of the importance of teamwork. Participants will see the advantages of working in strong, cohesive teams and how such teams can benefit the organization.
7. *Driving Performance* – provides managers with knowledge surrounding the performance management process and goal-setting (key performance indicators). Managers will learn how to effectively evaluate performance, how to give and receive valuable feedback, and how to have ongoing performance discussions with their team members.
8. *Continuous Process Improvement* – involves problem-solving, critical thinking, analyzing, and interpreting data to ensure quality. This course will provide management with an overall understanding of the importance of process improvement and when to use which tools. Participants will gain a more in-depth awareness of root-cause analysis, an expansion of their thinking, and a clear understanding of problem-solving methods.
9. *Delighting Customers* – provides managers with the fundamentals of exceeding customer expectations and how to convey this information to their team. Participants will learn to greet, build rapport, uncover needs, listen, clarify, explain, and handle difficult customers as well as challenging situations.
10. *Capstone* – culmination of all the other modules in which participants practice skills and reinforce what was learned previously via a simulation taken from “real life” at American Water.

In September 2005, Southeast Region graduated 313 managers (196 from Pennsylvania) from the program. Soon after, the company announced its divestiture from RWE and stated that “there was not a lot of support for the program to continue.” The decision was made to discontinue the program and instead focus on individual development plans. The Training & Organization Development Manager, who had been hired to support the program, shifted her focus to other priorities.

American Water also offered a five-day leadership development program for managers, provided by external consultants. RWE had an advanced leadership program at the London School of Economics. These two programs ended in the fall of 2005 or earlier. In addition, RWE had several leadership programs, including a director-level program (in Amsterdam) and a VP-level program (in Switzerland).

As of early 2008, no formal management-development process exists at PAWC. The company has made the decision to discontinue License to Manage (although it may continue to use modules in a limited manner where appropriate, such as call center supervisors). PAWC is working on developing a common approach to management/supervisor development. This approach will aim to have common core modules and then specific modules to meet local needs. However, no one in PAWC has formal responsibility for this effort.

While Schumaker & Company supports this effort, we are concerned that PAWC is more than a year away from having an explicit plan. Given its focus on reshaping the culture of the organization, management and leadership development would seem to be a critical need.

Finding VII-6 Human Resources does not have the capacity to support the change management requirements of PAWC.

During times of significant organizational change, such as a divestiture and new public offering, we would expect Human Resources in general and organization development (OD) staff in particular to play a key role in helping to guide American Water and its employees through the difficult process. Unfortunately, all organizational development positions at American Water remain vacant. The one person in corporate Human Resources who was hired to provide OD support has been reassigned to be the HR manager for corporate services.

PAWC’s Training & Organization Development Manager is focused primarily on technical training and not the broader change-management needs of the company. (*See Chapter II – Executive Management, External Relations, & Human Resources.*)

Once again, given PAWC’s focus on reshaping the culture, organizational development support would seem to be a critical need.

Finding VII-7 PAWC does not have any enterprise-wide improvement initiatives that fully engage employees at all levels.

Central to a high-performance organizational culture is a process to engage employees at all levels in organizational improvements. Employee teams are common to quality and customer service improvement initiatives in all types of business enterprises. We found no current initiatives aimed at employee involvement at PAWC.

The last such initiative at PAWC was called *Ideas into Action*. That initiative was active for 12 months, from July 2003 to June 2004. The review process continued for a subsequent six to eight months and the program was closed in 2005. Specific to PAWC, approximately 300 employees submitted roughly 650 ideas, of which 100 ideas were approved in Pennsylvania and 71 of these were implemented as of October 12, 2005. Thirty-one employees, including hourly and management, were directly involved as either volunteer panel members or pathfinders.

Finding VII-8 PAWC has limited management succession planning and workforce management capability, thereby making it difficult to assess the adequacy of staffing levels.

This topic is addressed extensively in *Chapter II – Executive Management, External Relations, & Human Resources*, specifically in *Finding II-7, Finding II-8, Finding II-9, Recommendation II-7, Recommendation II-8, and Recommendation II-9* in that chapter.

We reiterate the findings and recommendations herewith as it is a requirement of this task to assess the adequacy of American Water's management structure and staffing levels. While we may make general observations about the adequacy of the existing management structure, we cannot fully evaluate these areas. Based on the absence of comprehensive Organizational Capability Survey data and a comprehensive workforce plan, Schumaker & Company reiterates our concern with these areas.

Finding VII-9 American Water's ethics policies and practices have been substantially communicated to all employees.

In July 2006, American Water updated its Ethics Policy. (See *Chapter VI – Corporate Governance*.) This policy provides for an outside, independent entity to receive allegations of ethical violations and wrongdoing. The telephone number to report allegations is listed in the policy, and persons reporting allegations to the outside, independent entity can remain anonymous. A compliance officer in the American Water Works Service Company (AWWSC) Legal organization was named to monitor Ethics Policy implementation and training. American Water also has an Ethics Committee, made up of senior managers, which meets quarterly to review ethics issues. The American Water Board Audit Committee is charged with the responsibility of ensuring that the ethics program at American Water is fully implemented.

American Water requires all employees to attend Code of Ethics (COE) training. American Water also requires all non-union employees to sign annual certification statements indicating that they understand the COE and that they are not aware of any violations or, if they are aware of any violations, that they have reported them. Union employees are requested, but cannot be required, to sign these annual statements. American Water is in the process of electronically automating the process of updating these annual statements, although manual forms will still be available to employees.

Since the American Water Code of Ethics was rolled out in July 2006, ethics training has been conducted (September 2006 through January 2007) for employees at every level. Supervisors received an additional hour of training. During this time, 70 training sessions at PAWC were conducted involving almost 900 employees. In addition, 38 training sessions were held for over 150 supervisors. Class sizes for these sessions were small, ranging from four to 35 for employees and from one to 13 for supervisors. Since January 2007, all new employees have undergone ethics training by Human Resources. American Water is currently evaluating the need for additional and ongoing training needs.

In each of these training sessions, attendees are given a Code of Ethics brochure, which covers Code of Ethics content and features examples of unethical behavior. The attendees are also required to sign a sheet indicating that they received the brochure and attended the training session. All new hires must sign a similar form after receiving the training. Trainers are given detailed implementation guides for training as well as a facilitator's guide to accompany the Microsoft PowerPoint training presentation. The training session itself covers all aspects of the ethics policy and makes use of case discussion and exercises to further emphasize proper conduct. Five trainers have been designated to support this effort for PAWC.

The American Water Code of Ethics is available on the American Water intranet, and American Water management indicated that it will be posted on the Investor Relations section of the American Water website when American Water completes its initial public offering (IPO).

American Water also features ethics as an ongoing feature of its internal communications. The bi-monthly newsletter "Splash" regularly features ethics information and announcements on training. The weekly e-mail "News You Need to Know" also includes reminders on ethics certification. Intranet communications to all employees also provide information on ethics and related topics (e.g., diversity, corporate goals, performance, major changes and impacts).

American Water indicated that in 2008 it plans to continue communications on the Code of Ethics and to offer "Insider Training" regarding information related to a publicly-traded entity (although specific dates and accountability for the efforts have not been established).

On a broader note, American Water has used several internal communications vehicles (e.g., Change Partner Network, Splash Points/tailgate meetings) to further publicize ethics and company strategies. (See *Chapter II – Executive Management, External Relations, & Human Resources*.) In late 2007, PAWC's newly appointed President conducted a series of meetings with employees and managers at various PAWC facilities across the state. These meetings (17 between October and December 2007) were

conducted with the purposes of introducing the President to PAWC employees and of discussing important operations, issues, and expectations going forward. In addition, a two-day meeting was conducted (November 2007) with PAWC management for the PAWC President to discuss her vision and expectations for a more performance-based company, among other strategic issues.

Finding VII-10 Ethics allegations are properly recorded and promptly investigated.

All allegations of wrongdoing or ethical violations (even those originally reported inside American Water) are reported to an outside, independent entity. The person making the report can remain anonymous, if s/he so chooses. The allegation is then reported to the American Water Compliance Officer (in the American Water Legal organization) and is logged into a computer system designed specifically for the purpose of tracking ethical allegations. The Compliance Officer then assigns the case to an in-house investigator (all in-house investigators—many of them in the American Water Legal Department—receive specific training on properly conducting investigations). In some cases, as the situation warrants (e.g., no in-house investigator available at the location, case has unusual sensitivity), an outside investigator (usually an outside law firm or outside accounting firm) will be employed for the investigation.

As an investigation progresses, the investigator logs written narratives of his or her findings. At the conclusion, results, recommendations, and outcome (including any disciplinary actions) are recorded and the file is closed out. The Compliance Officer can track all cases as they progress and must approve the final actions and closeout. A summary of all new, open, and recently closed cases is reviewed quarterly by the Ethics Committee and a summary report is made to the Audit Committee of the American Water Board of Directors at each meeting.

The tracking system is fully documented, well laid out, and easy to use. Summary-level information on cases includes the type of allegation, who is assigned to investigate, the status of the investigation, and key dates. The system can be drilled down for more details on the investigation. The system also allows for ad-hoc reporting (e.g., trends in types of allegations or allegations by geographic location) for analysis purposes. We conducted an onsite random review of allegations in several categories and found, in all cases, that the investigations were promptly and thoroughly conducted and that resolutions/disciplinary actions were documented.

C. Recommendations

Recommendation VII-1 Expedite efforts to define and support a high-performing organizational culture. (Refer to Finding VII-1, Finding VII-2, and Finding VII-3.)

The new President of PAWC has begun to define a new organizational culture with a strategic direction on external focus and growth. Human Resources, in conjunction with Schumaker & Company's support, has begun to align its efforts in support of this emerging strategy and culture. We strongly

support these efforts and encourage further clarification of the values, strategies, and leadership practices that will support PAWC efforts to serve its customers and align to the interests of key stakeholders. We also strongly support the implementation of best operating practices across the American Water and PAWC organizations.

Recommendation VII-2 Implement an employee survey process with appropriate feedback and action-planning components. (Refer to Finding VII-4.)

Based on the documents presented, we believe that American Water is committed to implementing a comprehensive employee survey in 2008. We have some concern about the level of support for this effort and reiterate our strong belief that understanding employee attitudes is critical to driving the cultural changes envisioned for PAWC.

Recommendation VII-3 Implement a formal management development process. (Refer to Finding VII-5.)

Strengthening corporate culture is a function of clear vision and strong leadership. Schumaker & Company believes that it is imperative that PAWC leaders be supported through common values and leadership practices. This support is best accomplished through a formal leadership development process. While we do not intend to define a specific approach here, we are convinced that American Water must commit resources to defining and implementing a leadership development initiative.

Recommendation VII-4 Fill open Organization Development positions in American Water and assess the need for additional change management resources for PAWC. (Refer to Finding VII-5, Finding VII-6, and Finding VII-7.)

The 2003 restructuring was intended to leverage high-quality operations and to develop common ways of working. As we have noted in *Chapter IV – Support Services*, American Water and PAWC have not been entirely successful in this effort. We have made further note of the absence of employee engagement initiatives and leadership development. In *Chapter II – Executive Management, External Relations, & Human Resources*, *Finding 5*, *Finding 11*, and *Finding 12*, we have made extensive discussion of the lack of organizational development support for these kinds of training and organizational development efforts. Without additional resources, PAWC will be slowed in its change efforts. At minimum, the open positions at American Water should be filled and the company should give consideration to additional resources in Pennsylvania.

Recommendation VII-5 Implement workforce management processes at PAWC. (Refer to Finding VII-8.)

We reiterate our recommendations from *Chapter II – Executive Management, External Relations, & Human Resources*, *Recommendation II-8* and *Recommendation II-9*, because we believe they are essential to addressing any questions related to the adequacy of the management structure and staffing levels.

VIII. Affiliate Interests

Pennsylvania-American Water Company (PAWC), the largest regulated water utility in Pennsylvania (PA), is headquartered in Hershey, PA, and is part of the Eastern Division/Southeast Region organization of American Water Works Company, Inc. (American Water). In turn, American Water is a business segment of RWE AG of Essen, Germany (RWE) (although RWE has announced its upcoming plans to divest of American Water). PAWC holds responsibility for the delivery of safe, reliable, and economic water distribution, as well as customer service to residential and business customers in PA.

With regard to affiliated relationships and transactions, Schumaker & Company conducted an in-depth review of PAWC's affiliate interests that impact the company's regulated utility operations in Pennsylvania. In this case, an affiliate interest is defined as a business entity that directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with the regulated utility. Control is defined as the power to dictate or influence the policy of an entity, whether through the ownership of voting securities, by contract, or otherwise. This chapter provides a discussion of PAWC's affiliate relationships and associated transactions. In particular, this review determines the extent to which, if at all, ratepayers are compromised by PAWC's plans or activities in relation to affiliate interests. Our review of affiliate interests identified and assessed all relationships between PAWC and its affiliated entities. That review included the following activities:

- ◆ An identification and summarization of supporting documentation, billings, and charges to and from PAWC and its affiliates for the last five years
- ◆ An evaluation of the fairness and equity of the cost-allocation methodologies used by or impacting PAWC, including the reasonableness of overhead factors utilized
- ◆ A determination as to whether each centralized function is provided most effectively and efficiently on a centralized rather than decentralized basis, and an assessment of whether the function could be provided at a lower cost by an outside party
- ◆ An analysis of PAWC's adherence to law as established in Public Utility Code 66 Pa.C.S. §2102
- ◆ A determination of the extent to which PAWC's financial strength is impacted by or insulated from its affiliated (regulated or unregulated) companies
- ◆ A determination as to whether any of PAWC's, or its affiliates', financial instruments contain credit-rating triggers or provisions leading to collateral calls that carry the potential to unduly affect the regulated utility's liquidity
- ◆ A determination of the existence of formal dividend policies impacting PAWC, a summary of such policies including internally and externally imposed restrictions, and an analysis of PAWC's adherence to the policies
- ◆ A determination of the extent to which PAWC is protected from bankruptcy by the parent and other entities of the holding company

A. Background & Perspective

Affiliate Relationships

Prior to American Water's acquisition by RWE AG of Essen, Germany (RWE), as part of its Thames Water Utilities organization (subsequently divested by RWE), most American Water subsidiaries were regulated entities. Following its acquisition by RWE, RWE/Thames/American Water management decided that the company needed to grow its non-regulated business revenue, which now account for approximately 10% to 13% of its operations. At the current time, American Water still intends to grow but with a focus on all aspects of its operations (likely not as many non-regulated opportunities). Currently, American Water has operations in 32 states, including regulated operations that are subject to utility commission oversight in Arizona, California, Hawaii, Illinois, Indiana, Iowa, Kentucky, Maryland, Missouri, New Jersey, New Mexico, New York, Ohio, Pennsylvania, Tennessee, Texas, Virginia, and West Virginia.

Organizations

The American Water Works Company (AWWC) is the parent company. All costs within AWWC are kept there and are not passed down to any subsidiary. Costs include those of the President/CEO, the SVP/CFO, and their executive assistants. Also the charges from American Water Works Service Company (AWWSC) to AWWC are not passed down to American Water subsidiaries. The parent company has the following major subsidiaries:

- ◆ *American Water Works Service Company* is a service company that is designed to aid, assist, and advise other subsidiaries, such as PAWC, in their business operations by providing accounting, administration, communications, corporate secretarial, engineering, financial, human resources, information technology, operations, rates and revenue, risk management, and water quality services. Because AWWSC comprises the major affiliate costs for PAWC, how AWWSC charges are allocated to PAWC is discussed later in *Finding VIII-2*.
- ◆ *American Water Capital Corporation* (AWCC) is the financing arm for AWWC, AWWSC, and regulated entities only. It was started in 2000 (as a not-for-profit entity) to consolidate financing operations (and potentially vehicles) as they were previously decentralized at each American Water entity. At that time, American Water had roughly \$2.3 billion (system-wide) in debt. As of December 31, 2007, it had approximately \$4.8 billion in debt, with \$2.8 billion through AWCC, due primarily to infrastructure replacements and growth. The AWWSC VP & Treasurer is responsible for AWWC financings and for the agreement with PAWC that documents how affiliate transactions are handled. American Water management believes that consolidation of debt provides economies of scale, thereby allowing lower administrative charges and interest rates to regulated entities. As discussed in *Chapter III – Financial Management*, Schumaker & Company concurs that PAWC cash (investments and borrowings) is managed in an efficient and cost-effective manner by corporate cash-management functions and that long-term debt is obtained at favorable rates.

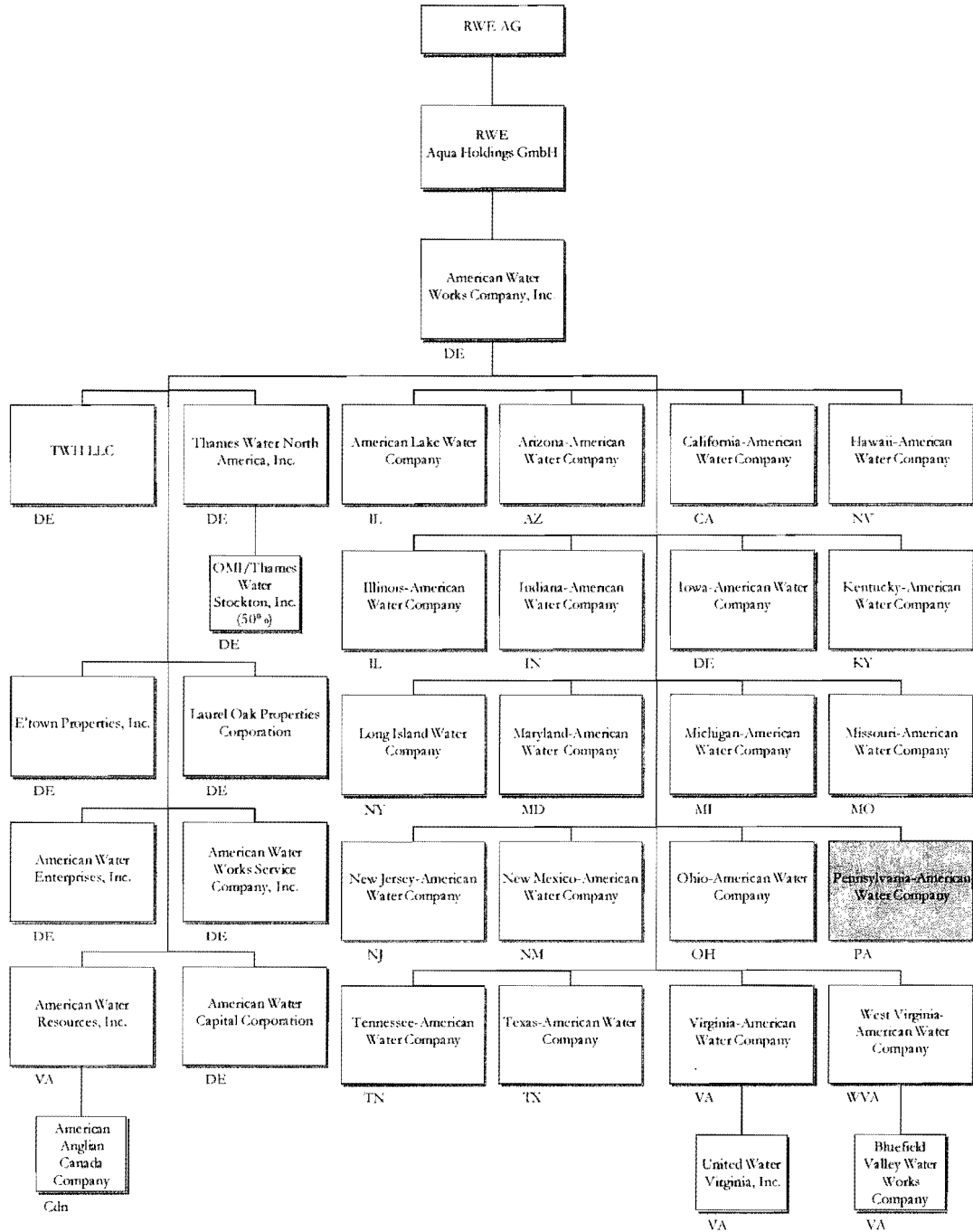
- ◆ *American Water Enterprises* (AWE) holds operations and maintenance (O&M) contracts with various municipalities (none in Pennsylvania).
- ◆ *American Water Resources* (AWR) provides homeowner protection-plan services directly to PAWC and other American Water utility customers. Specifically AWR provides specialized water line protection, sewer line protection, and in-home plumbing emergency protection services for repairs to the water and/or sewer lines running from a home to the street and for plumbing repairs that occur within the home. Because most homeowners' insurance policies do not cover this type of damage, these protection programs are designed to insulate homeowners from unexpected high repair costs associated with water or sewer line failures and with in-home plumbing repairs. Claim coverage amounts are up to \$5,000 for water lines and up to \$8,000 for sewer lines.
- ◆ *Applied Water Management* (AWM) is a wholly-owned subsidiary of E'town LLC, which is a wholly-owned subsidiary of TWH LLC. TWH LLC, in turn, is a wholly-owned subsidiary of American Water. AWM provides environmental management in various states, but not Pennsylvania; projects include Battery Park in NYC, Tampa Bay desalination, etc.

Also providing services to PAWC is American Carbon Services (ACS), which provides carbon regeneration services to utility organizations, both inside and outside the American Water organization. ACS is not a standalone legal entity, but rather is a line of business of AAET L.P.

Exhibit VIII-1 illustrates the American Water organization within the RWE organization, with state of incorporation shown in the lower left corner of each box. Pennsylvania-American Water Company is highlighted in gray to showcase its location within the American Water organization.

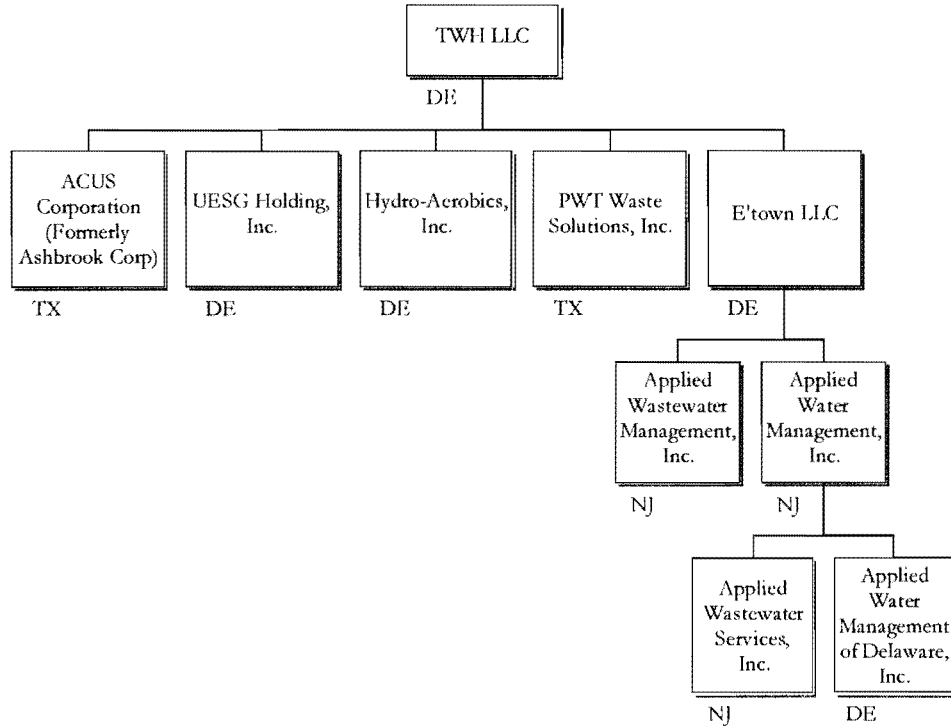
The subsidiaries of TWH, LLC and American Water Enterprises, Inc. (AWE) are shown respectively in *Exhibit VIII-2* and *Exhibit VIII-3*.

Exhibit VIII-1
American Water Works Company, Inc. Organization
as of December 31, 2007



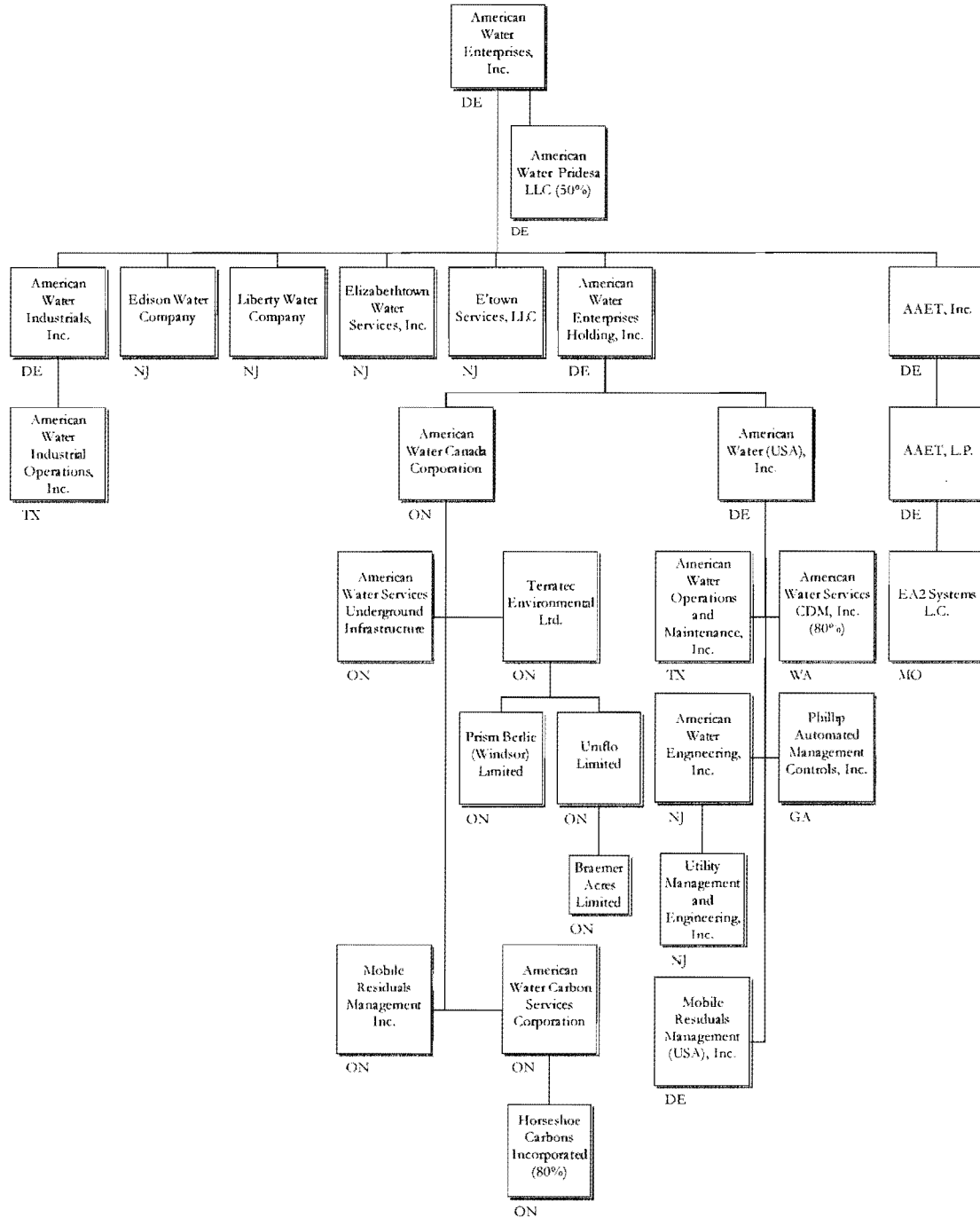
Source: Information Response 181 and Company Comments

**Exhibit VIII-2
TWH, LLC Organization
as of December 31, 2007**



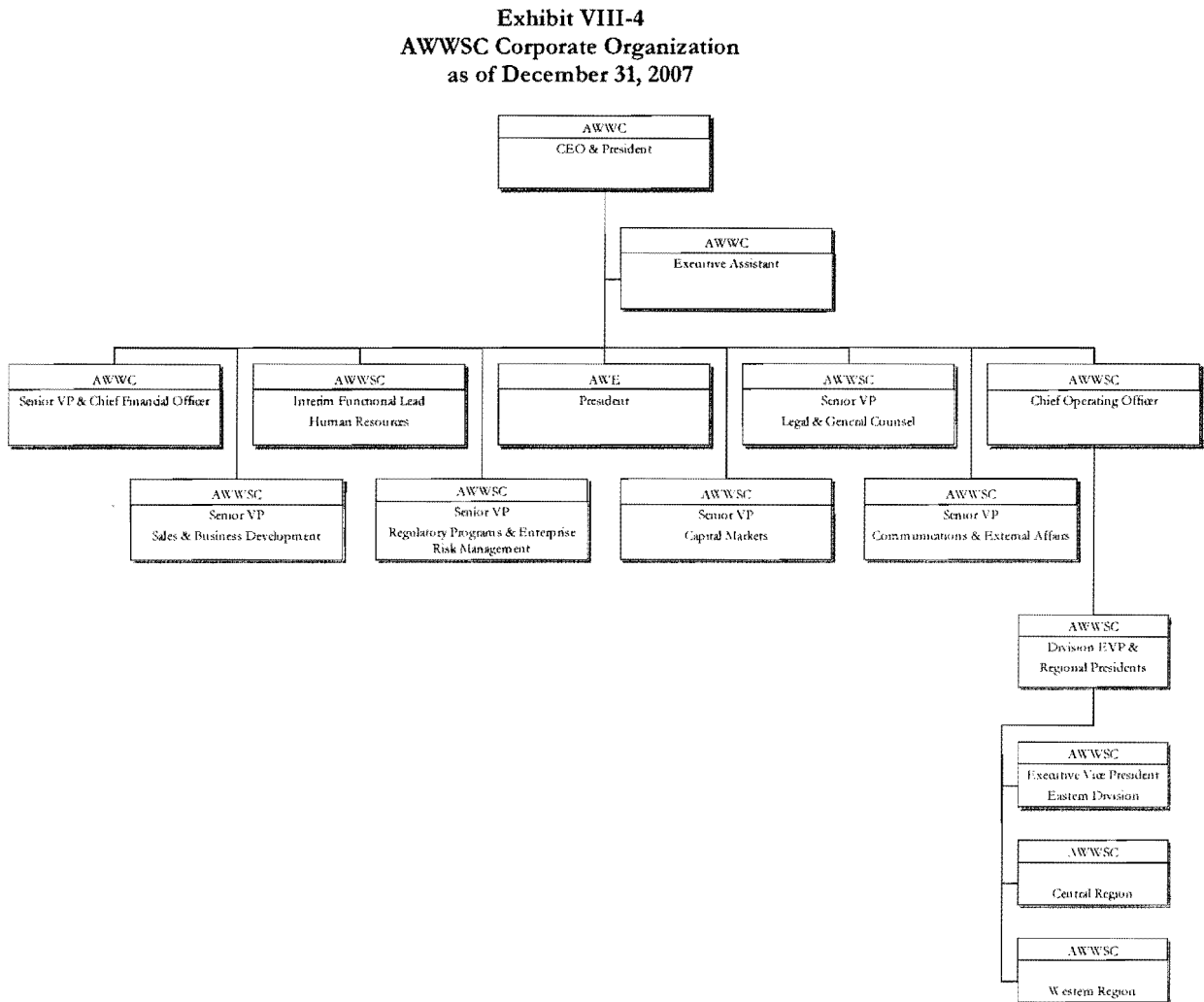
Source: Information Response 181

Exhibit VIII-3
American Water Enterprise, Inc. Organization
as of December 31, 2007



Source: Information Response 181 and Company Comments

AWWSC has both a corporate group in Voorhees as well as two divisions (Eastern and Western). The divisions are composed of two regional organizations, which are located in various locations throughout American Water's service territories. *Exhibit VIII-4* illustrates the AWWSC corporate organization.



Acronyms at top of each box represent the employee's company affiliation. Although most employees are AWWSC employees, some are actually American Water Works Company (AWWC) employees or American Water Enterprises (AWE) employees.

Note: Regional presidents are also EMT members.

Source: Information Response 257

As stated in a service agreement between AWWSC and PAWC, in addition to corporate guidance, AWWSC provides PAWC with the following services:

- ◆ *Accounting* – assist with preparation and implementation of accounting methods and procedures to determine that they conform fully to the requirements, rules, and regulations of governmental authorities having jurisdiction and review.
- ◆ *Administration* – perform or assist in performance of corporate activities, thereby keeping abreast of economic, regulatory, governmental, and operational developments and conditions.
- ◆ *Communication* – recommend procedures to promote satisfactory relations with employees, customers, communities, and the general public and assist in preparation of communication materials.
- ◆ *Corporate Secretarial* – assist in preparation and/or maintain documents such as minute books, by-laws, contracts, stocks, deeds, and other corporate records, and administer an orderly program of records retention.
- ◆ *Engineering* – assist and provide engineering services (i.e., system surveys, hydraulic analyses, inspections, field investigations) to aid in planning for, operating, maintaining, and constructing facilities, and provide a materials management program for volume purchase.
- ◆ *Financial* – assist in cash management and in the development and implementation of financing programs, advice on securities' market conditions, and preparation of financial reports.
- ◆ *Human Resources* – assist in obtaining qualified personnel and in carrying out training programs for the development of personnel, assure compliance of employment laws, and advise with pension and benefit plans.
- ◆ *Information Systems* – provide electronic data-processing services, including customer billing and accounting, financial statements, and other reports required by federal and state agencies.
- ◆ *Operation* – develop and assist the implementation of operating procedures to promote efficient and economic operation.
- ◆ *Rates and Revenue* – recommend changes in rates, rules, and regulations and assist in conduct of proceedings before, and in compliance with the rulings of, regulatory bodies having jurisdiction over operations.
- ◆ *Risk Management* – assist in the establishment of safety and security programs to avoid or minimize risk and loss, provide a risk management program to review exposures to accidental loss, recommend efficient methods of protection, arrange for purchase of insurance coverage, and supervise any investigation procedures.
- ◆ *Water Quality* – assist in compliance with standards of governmental agencies, provide design criteria for processes and technical assistance, and help establish and attain water quality objectives; also provide laboratory services for programmed analyses as required by drinking water regulations and any special analyses required by PAWC.

The AWWSC organization provides services to PAWC and other utilities within the Southeast Region states of Kentucky, Maryland, Tennessee, Virginia, and West Virginia. The list below reflects organizations/services provided to PAWC prior to the organization realignment that occurred in the latter part of 2007. These organizations/services include:

- ◆ Business Development
 - Wastewater Business Performance & Environmental Compliance
 - Client Business Development
 - Business Development Support
 - Project Management
- ◆ External Affairs
 - Communications and Customer Relations
 - Governmental & Regulatory Affairs
- ◆ Finance
 - Rates & Regulations
 - Performance, Planning, & Reporting
 - Controls & Compliance
- ◆ Human Resources
- ◆ Legal
- ◆ Regional Service Delivery
 - Business Performance
 - Operational Excellence
 - Contract Operations
 - Customer Relations
 - Field Resource Coordination Center (FRCC)
 - Collections & Compliance
 - Dispatch Center & Customer Service Center (CSC)
 - Major Customer Accounts Management
 - Engineering
 - Project Delivery & Developer Services
 - Technical Services
 - Asset Management & Capital Programs Management
 - Major Customer Accounts Management
 - Environmental Management & Compliance
 - Water Quality Management
 - Environmental Compliance

- Maintenance
 - Reliability
 - SCADA Management
- Network
- Operational Risk Management
 - Loss Control
 - Security & Event Management
- Production
- ◆ Pennsylvania-American Water Company Service Delivery – Network & Production
- ◆ Kentucky-American Water Company Service Delivery – Network & Production
- ◆ Tennessee-American Water Company Service Delivery – Network & Production
- ◆ Virginia- & Maryland-American Water Company Service Delivery – Network & Production
- ◆ West Virginia-American Water Company Service Delivery – Network & Production

Agreements

Exhibit VIII-5 lists specific affiliate agreements involving PAWC and American Water entities. All of the agreements have been previously approved by the Pennsylvania Public Utility Commission (PaPUC); however, Schumaker & Company believes that the AWWSC/PAWC agreement is not up-to-date and should be resubmitted to the PaPUC for review and approval, as discussed later in *Finding VIII-4*.

Exhibit VIII-5
Affiliate Agreements involving PAWC and Other American Water Entities
as of December 31, 2007

Type	Parties	Term
Service agreement for services provided by AWWSC to PAWC	AWWSC/PAWC	01/01/89--Ongoing Amended 09/18/89
Lease agreement for building office space provided by PAWC to AWWSC at 800 West Hersheypark Drive in Hershey, PA	PAWC/AWWSC	Original Date 01/24/00 Latest Amendment 01/01/05--02/28/15
Furniture, equipment, and computer hardware and software agreement for provision of electronic data-processing services by AWWSC to water utilities using PAWC's equipment	PAWC/AWWSC	01/01/94--Ongoing
Financial services agreement	AWCC/PAWC	06/15/00--Ongoing
Customer support and call center services for water line protection program between PAWC and AWR	PAWC/AWR	05/09/00 Ongoing
Customer support and call center services for sewer protection program between AWR and PAWC	AWR/PAWC	11/25/03 Ongoing
Customer in-home plumbing emergency protection program between AWR and PAWC	AWR/PAWC	5/12/06 Ongoing
Granular activated carbon (GAC) agreement for Montrose Water Treatment Plant with AWR d/b/a American Carbon Services (ACS)	Montrose Water Treatment Plant/AWR	01/01/02--12/31/04 *
GAC agreement for Pittsburgh with AWR d/b/a ACS	Pittsburgh System (Hays Mine Treatment Plant and Aldrich Water Treatment Plant)/AWR	01/01/04--12/31/07
GAC agreement for Huntsville Water Treatment Plant with AWR d/b/a ACS	Huntsville Water Treatment Plant/AWR	01/01/05--12/31/07
GAC agreement for Ceasetown Water Treatment Plant with AWR d/b/a ACS	Ceasetown Water Treatment Plant/AWR	01/01/05--12/31/07
GAC agreement for West Shore Regional Water Treatment Plant with AWR d/b/a ACS	West Shore Regional Water Treatment Plant/AWR	11/01/05--12/31/09
GAC agreement for Silver Spring Water Treatment Plant with AWR d/b/a ACS	Silver Spring Water Treatment Plant/AWR	01/01/07--12/31/09
GAC agreement for Norristown Water Treatment Plant with AWR d/b/a ACS	Norristown Water Treatment Plant/AWR	03/02/07--03/01/09
GAC agreement for New Castle Water Treatment Plant with AWR d/b/a ACS	New Castle Water Treatment Plant/AWR	01/01/07--12/31/08
GAC agreement for Hershey Water Treatment Plant with AWR d/b/a ACS	Hershey Water Treatment Plant/AWR	01/01/07--12/31/09

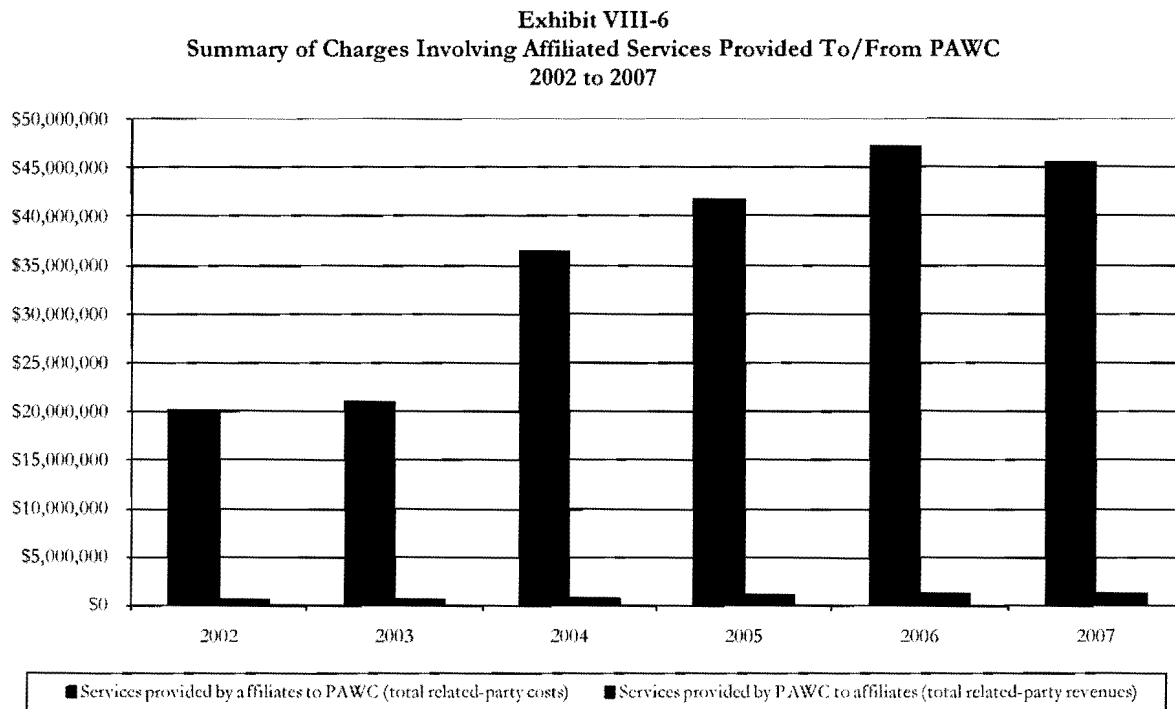
* The most recent GAC contract executed for the Montrose Water Treatment Plant expired on 12/31/2004. A complete filter rebuild of the two filters at the plant occurred recently. The first filter was rebuilt in 2006, the other in 2007. At that time, virgin GAC media was installed in the filters. No contract with American Carbon Services was required because its services were not required. PAWC expects to execute a contract with American Carbon Services in 2008 to cover regeneration of the GAC in the filters.

Source: Information Responses 182, 183, 192, 845, 853, and 863

Affiliate Transactions

Services Provided To/From PAWC

Exhibit VIII-6 illustrates the summary charges associated with services provided from/to PAWC.



Source: Information Responses 183, 723, 881, 882, 883, 884, 885, 886, 887, 888, and Company Comments

Exhibit VIII-7 displays the details of charges from affiliates to PAWC (PAWC related-party costs) and from PAWC to affiliates (PAWC related-party revenues). As anticipated by Schumaker & Company consultants, the costs that PAWC pays to AWWSC for services are the largest component of PAWC's affiliate transactions.

Exhibit VIII-7
Summary of Charges Involving Affiliated Services Provided To/From PAWC by Affiliate/Type
2002 to 2007

	2002	2003	2004	2005	2006	2007	Compound Growth Rate
Services provided by AWWSC to PAWC							
O&M expenses	\$16,495,000	\$11,359,000	\$31,150,000	\$32,351,000	\$40,396,000	\$40,610,000	19.7%
Capitalized costs	\$2,719,000	\$7,604,000	\$3,594,000	\$7,911,000	\$3,664,000	\$3,321,000	4.1%
Services provided by AWWSC to PAWC	\$19,214,000	\$18,963,000	\$34,744,000	\$40,262,000	\$44,060,000	\$43,931,000	18.0%
Lane of credit fees paid to AWCC	\$342,000	\$221,000	\$192,000	\$187,000	\$263,000	\$217,000	-8.7%
Interest paid to AWCC on intercompany borrowings	\$437,000	\$964,000	\$382,000	\$279,000	\$1,834,000	\$869,000	14.7%
Preliminary cost of long-term financings with AWCC	\$245,000	\$69,000	\$57,000	\$0	\$0	\$0	-100.0%
Purchase of granular activated carbon from ACS	\$0	\$760,000	\$987,000	\$1,071,000	\$1,019,000	\$438,000	3275.2%
Work by WVAWC employee on behalf of PAWC following transfer	\$0	\$0	\$0	\$0	\$0	\$5,300	1295.9%
Services provided by affiliates to PAWC (total related-party costs)	\$20,238,000	\$20,977,000	\$36,362,000	\$41,799,000	\$47,176,000	\$45,460,300	17.6%
Lease of building office space by AWWSC	\$241,000	\$271,000	\$319,000	\$638,000	\$691,000	\$706,000	24.0%
Rental of furniture and equipment by AWWSC	\$371,000	\$323,000	\$299,000	\$220,000	\$205,000	\$189,000	-12.6%
Billing and collection services provided to AWR	\$0	\$150,000	\$227,000	\$308,000	\$373,000	\$478,000	3334.7%
Services provided by PAWC to affiliates (total related-party revenues)	\$612,000	\$744,000	\$845,000	\$1,166,000	\$1,269,000	\$1,373,000	17.5%

WVAWC: West Virginia-American Water Company

Source: Information Responses 183, 723, 881, 882, 883, 884, 885, 886, 887, 888, and Company Comments

Services Provided by Affiliates to PAWC

As anticipated, the largest share of affiliate charges to PAWC are for AWWSC services, followed by AWCC and ACS charges, respectively. *Exhibit VIII-8* displays PAWC's share of AWWSC expenses from 2002 to 2007.

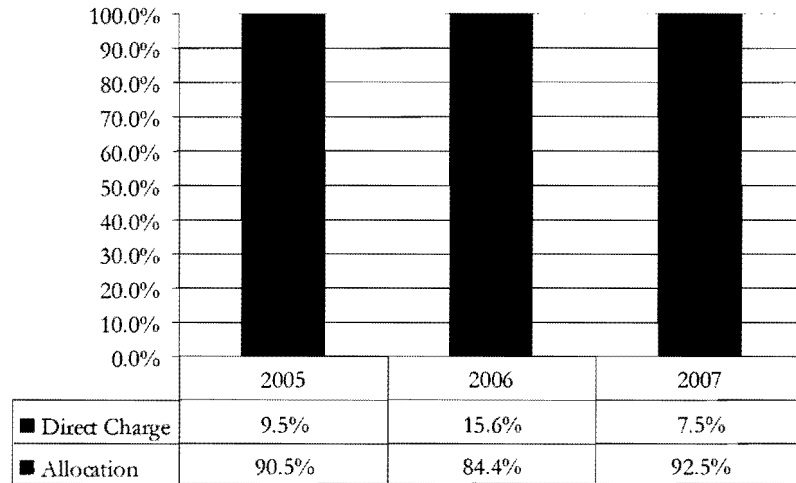
Exhibit VIII-8
PAWC's Share of AWWSC Expenses
(\$ Thousands)
2002 to 2007

	2002	2003	2004	2005	2006	2007	Compound Growth 2002-2007
Total AWWSC Expenses Billed to All Affiliates, Including PAWC	\$106,899	\$124,896	\$198,745	\$232,277	\$264,825	\$254,255	18.9%
PAWC's Share of AWWSC Expenses							
Capital Construction	\$2,719	\$7,604	\$3,594	\$7,911	\$3,664	\$3,321	4.1%
O&M Expenses	\$16,495	\$11,359	\$31,150	\$32,351	\$40,396	\$40,610	19.7%
Total Capital Construction and O&M Expenses	\$19,214	\$18,963	\$34,744	\$40,262	\$44,060	\$43,931	18.0%
Total PAWC's % of AWWSC Expenses	17.97%	15.18%	17.48%	17.33%	16.64%	17.28%	

Source: Information Response 724

Information available for the last three years (2005 to 2007) indicates that direct charges having ranged from approximately 7.5% to 15.6% of total charges from AWWSC to PAWC.

Exhibit VIII-9
Percentage of Direct Charges versus Allocations for AWWSC Charges to PAWC
2005 to 2007



Source: Information Response 829

With regard to AWWSC services, PAWC's charges are on an at-cost, not-for-profit basis as specified in the agreement between the two entities. A portion of these services are capitalized as part of PAWC's utility plant assets.

Services Provided by PAWC to Affiliates

The largest portion of affiliate charges from PAWC to affiliates is for lease of office space and associated furniture and equipment at the PAWC headquarters location in Hershey to AWWSC for use by its Southeast Region staff. Other charges for affiliate charges from PAWC to affiliates are related to billing and collection services provided by PAWC to AWR involving AWR's water line protection, sewer line protection, and in-home plumbing emergency protection services provided to PAWC's customers. (PAWC's customers pay AWR for these programs, resulting in revenue to AWR, then AWR pays PAWC for billing and collection services provided by PAWC.)

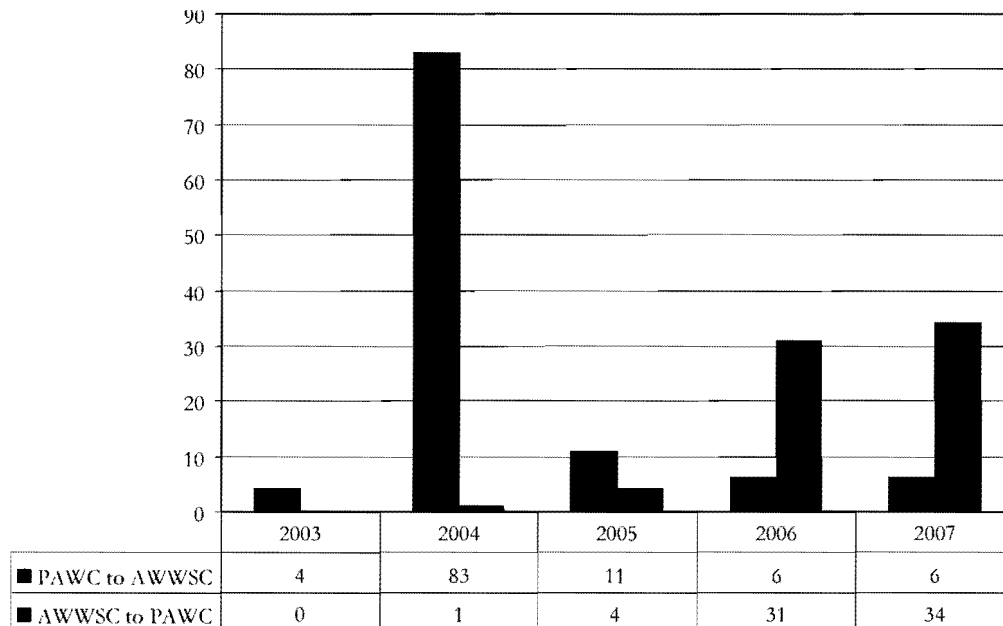
Personnel Transfers From/To PAWC

When employees are transferred from/to PAWC and its affiliates, the transfers are accounted for by American Water at the headcount level only. That is, costs previously incurred (up to the time of transfer) for salaries/wages, employee benefit costs, and related budget dollar amounts (such as training

costs) remain with the group from which the employee transferred. Costs subsequently incurred (after the time of transfer) are charged to the group to which the employee transferred.

Exhibit VIII-10 illustrates the headcount of individuals transferred between PAWC and AWWSC during the years spanning 2003 through 2007.

Exhibit VIII-10
Personnel Transfers From/To PAWC and its Affiliates
2003 to 2007



Source: Information Responses 184 and 723

The reorganization that created the regional AWWSC organizations was primarily implemented during 2004 and is the reason for the higher 2004 transfers of PAWC personnel to AWWSC. The higher level of personnel transfers in 2006 from AWWSC to PAWC reflects the transfer back of individuals who were part of regional organizations (e.g., network and engineering) but were dedicated to PAWC. The 2007 number includes year-end transfers resulting from American Water's most recent realignment.

Property Transfers From/To PAWC

There have been no affiliated transactions involving property transfers during the past five years. Additionally, Pennsylvania-American Water Company is the owner of real property that has been improved with a two-story building located at 800 West Hersheypark Drive in Hershey (PA). On January 24, 2000, PAWC and AWWSC entered into a lease agreement whereby AWWSC agreed to lease office space at the Hershey location. Four subsequent addendums to the agreement have added to the office space under lease by AWWSC.

Major Processes and Systems

Cost Accumulation & Assignment

Pennsylvania-American Water Company

PAWC's time and attendance system is primarily for payroll purposes. The PAWC system, which interfaces with the AWWSC's JDE time and attendance system, produces a default time sheet for each PAWC employee based on predetermined information provided. Labor distribution is validated. Leave balances (vacation, sick days, etc.) are created and validated against the available balance. Job-type codes are used to calculate a base rate. The system is also designed to consider applicable shift differentials so that the employee's total gross pay can be calculated. All hours reflected in the time and attendance system are verified with those hours transferred to the JDE payroll module.

Unlike the JDE cost-allocation module that automatically determines AWWSC charges to American Water affiliates, the regional AWWSC organization must manually create an invoice if, and when, PAWC performs services for other American Water entities. Charges from PAWC to AWWSC or other American Water affiliates are processed via an inter-company request form. An example of such a charge is the monthly rental charge to AWWSC for Hershey office space. Only in rare and exceptional cases, however, does PAWC bill other regulated affiliates for goods and/or services. In such situations, the inter-company billing request form is also used. Both the initiating and receiving parties must agree on the charges before processing. Billing is at actual cost of the goods or services.

AWWSC

Time spent by AWWSC employees to provide services to all business units is recorded on weekly time sheets. The time spent to provide services directly to regulated or non-regulated business units (BUs) is directly charged to the billing number (sometimes referred to as a charge code) that is specific to the BU(s). The time spent providing services shared in common with similar services provided to other regulated and non-regulated BUs is allocated based on formulas as discussed in the *Cost Allocation* section as *Tier One* charges.

Three major types of billing numbers are used within AWWSC for cost accumulation as follows:

- ◆ *Authorizations* – These billing numbers are used to segregate costs for specific tasks or projects that benefit a specific group of BUs (i.e., water quality research for surface water treatment plants) or a more all-encompassing group of BUs (i.e., the start-up costs for the Call Center project). *Tier One* charges to regulated and non-regulated BUs that benefit from the completion of a project billed through an authorization billing number are determined through the use of a cost-allocation formula.

- ◆ *Task Orders* – These billing numbers are used to segregate costs for specific tasks or projects that are primarily associated with specific capital projects. In most instances, time charges can be directly assigned to the individual BU that is authorized to complete a capital project.
- ◆ *Formulas* – These billing numbers are used to record charges for time spent providing services to two or more BUs (i.e., purchasing, payroll, tax preparation, etc.). Formulas are used to segregate and allocate the costs incurred in providing similar services among the group of BUs that benefit from that service.

Additionally, overhead billing numbers are used by support staff and facilities services for support staff labor, utility bills, rent, depreciation, etc. In this way, they serve as a means of assigning overhead costs either directly in support of one operating company (direct charges) or in allocation to several operating companies (allocations).

Direct Charges/Cost Allocation

The hierarchy of how AWWSC charges are billed to other American Water affiliates is as follows:

- ◆ First, direct charges are made to a subsidiary or a group of subsidiaries based on time reporting; direct charges are made for services provided to an identifiable business unit or, for employees performing transactional services, on the basis of a sample period of detailed time sheet records.
- ◆ Second, AWWSC costs are then split between regulated and non-regulated entities based on what American Water considers cost causative factors, also referred to by American Water as *Tier One* charges. This was a new step that began in 2005 based on work performed by a cost-allocation committee with input from an outside consulting firm (Deloitte Touche). The role of the committee was to review AWWSC's cost-allocation procedures, particularly with regard to the allocation of AWWSC costs to the non-regulated entities. In this way, the committee could ensure that an appropriate portion of AWWSC costs was allocated to the non-regulated entities, based on the nature of any services provided to them. The committee was formed in late 2003 and work (including interviews with all AWWSC functional leads) continued until 2004. Its results (a matrix of factors by group and associated rationales) were then approved and submitted to a "billing re-write process" group as one of the inputs in making changes to American Water's cost-allocation process. Implemented at the beginning of 2005, training was provided to all AWWSC employees by the Human Resources (HR) organization. The metrics currently being used for allocating these *Tier One* charges among regulated and non-regulated entities include:
 - 1) *3-Factor Formula* – includes the primary cost drivers of (1) operating revenues, (2) net property, plant, and equipment, and (3) employees that are common to the operation of regulated and non-regulated BUs. Each of these drivers is equally weighted within the formula. Also, these metrics include only those non-regulated BUs that are receiving services.
 - 2) *2-Factor Formula* – includes the primary cost drivers of operating revenues and employees, with each of these drivers equally weighted within the formula. Also, these metrics include only those non-regulated BUs that are receiving services.

- 3) *Revenue Factor* – Operating revenues were selected as a surrogate for customers, because certain affiliates do not have their own customers. For example, this factor is the primary cost driver for external communication. Also, this metric includes only those non-regulated BUs that are receiving services.
- 4) *Personal Computer Factor* – includes the number of personal computers as the primary cost driver for those Information Technology Services (ITS) organization services associated with acquiring and supporting personal computers (PCs).
- 5) *Total Premises Factor* – includes the number of premises¹ maintained on the AS/400 database as the primary cost driver for ITS services associated with operation of AS/400 computers.
- 6) *Employee Factor* – includes the number of employees as the primary cost driver for general employee-related services such as human resources and payroll. Also, this metric includes only those non-regulated BUs that are receiving services.
- 7) *Budgeted Capital Projects and Engineering Project Management Factor* – includes the dollar value of budgeted capital expenditures for the year as the primary cost driver for services associated with capital projects as well as costs not directly assignable to task orders.
- 8) *Research Authorization Project Factor* – includes the dollar value of budgeted research projects for the year as the primary cost driver for services associated with water quality research projects. This metric includes only those non-regulated BUs that are receiving services.
- 9) *Accounts Payable Factor* – includes the number of invoices, purchase orders, and P-Card transactions processed on an annual basis as the primary cost driver for transactional services associated with purchasing and paying invoices for goods and services.
- 10) *Employee and Retiree Factor* – includes the sum of the number of employees and retirees as the primary cost driver for Human Resource's Benefits Call Center services and its benefits support communications.
- 11) *Procurement Volume* – includes the procurement volume (in dollars) for the previous year as the primary cost driver for transactional services associated with procurement and supply chain for goods and services.
- 12) *Paychecks Issued* – includes the number of paychecks processed for the previous year as the primary cost driver for transactional services associated with processing paychecks for employees of all business units.
- 13) *Purchasing Factor* – includes the number of annual purchase orders as the primary cost driver for services associated with purchasing goods and services under supply contracts.
- 14) *ITS Servers Allocator* – includes the number of servers dedicated to each function as the primary cost driver for services associated with computer servers that are dedicated to regulated business units versus non-regulated business units.

¹ The term "premises" is the reference to a location/customer record in ORCOM. Billing is done for some non-regulated customers as well as regulated customers. The statistic is easily obtained from ORCOM records.

- ◆ Third, the number of customers is used to split regulated costs among the various utility organizations, also referred to by American Water as *Tier Two* charges. The number of customers at year end is used for allocations in the following year (unless significant changes occur). American Water management uses the number of customers for splitting costs among regulated entities because all of its regulated customers are considered to receive essentially the same services.
- ◆ Fourth, overhead costs are charged to both directly charged and allocated costs.

The above description is conceptually the hierarchy of how direct charges/cost allocations occur, although the computer system actually performs the first three items simultaneously and then applies overhead costs accordingly.

AWWSC expenses are categorized in *Exhibit VIII-11*, which shows whether a category results from being directly charged, allocated, or potentially both.

Exhibit VIII-11
AWWSC Expense Categories
as of December 31, 2007

Expense Category	Description	Direct Charged	Allocated	Comments
Labor	Base pay (salaries) of managerial, professional, and technical employees	X	X	Professional personnel working for one or several operating companies
Support	Wages and salaries of office support personnel, including secretaries, clerical personnel, telephone operators, and mail clerks		X	Administrative personnel supporting the professional staff; thus support costs are allocated on the basis of professional labor
Labor-related Overheads	Employee benefit costs (payroll taxes, medical coverage, pensions, disability insurance) and other general expenses	X	X	Primarily employee benefit costs that relate directly to labor
General overheads	Office rent, equipment leases, telephone, electric, office supplies, property taxes, office maintenance		X	Allocated on the basis of professional labor
Vouchers/journals	<ul style="list-style-type: none"> ◆ Travel expenses incurred by AWWSC personnel ◆ Other items submitted for reimbursement by employees, including professional association dues ◆ Outside service contracts for such things as actuarial services ◆ Various other expenditures, including data center expenses for software licenses and hardware maintenance 	X	X	May be either directly in support of one operating company (e.g., an engineer traveling from the Corporate Office to the operating company) or allocated to several operating companies

Source: Information Response 831

The VP Planning & Reporting is responsible for cost-allocation oversight at AWWSC. On behalf of PAWC, the AWWSC Southeast Region Finance Director is responsible for cost-allocation oversight at PAWC. The Financial Planning & Analysis group reporting to the Southeast Region Finance Director reviews the AWWSC bills on a monthly basis to ensure that charges are appropriate.

Systems

AWWSC uses JD Edwards (JDE) from Oracle for its financial enterprise resource planning (ERP) system, and as such, it is the system used to support direct billing and/or cost allocation to affiliated companies. Additionally, AWWSC and PAWC use internally-constructed time and attendance modules that are downloaded into the JDE software.

Invoicing and Payment Methodologies

AWWSC bills monthly for the cost it incurs in providing affiliate services. All charges that pass through AWWSC must be billed at the end of each period; therefore, according to AWWSC management, a high-level verification of the AWWSC profit and loss (P&L) statement is performed to ensure that all expenses were billed.

A monthly bill (AWWSC to PAWC) showing a description of service (by function), number of associated hours (by function), associated payroll dollars (by function), associated expense dollars (by function), and total dollars (by function), along with summary totals is provided for current-month charges. The total amount due includes total current month charges minus payment for prior estimated billing, plus estimated current-month billing.

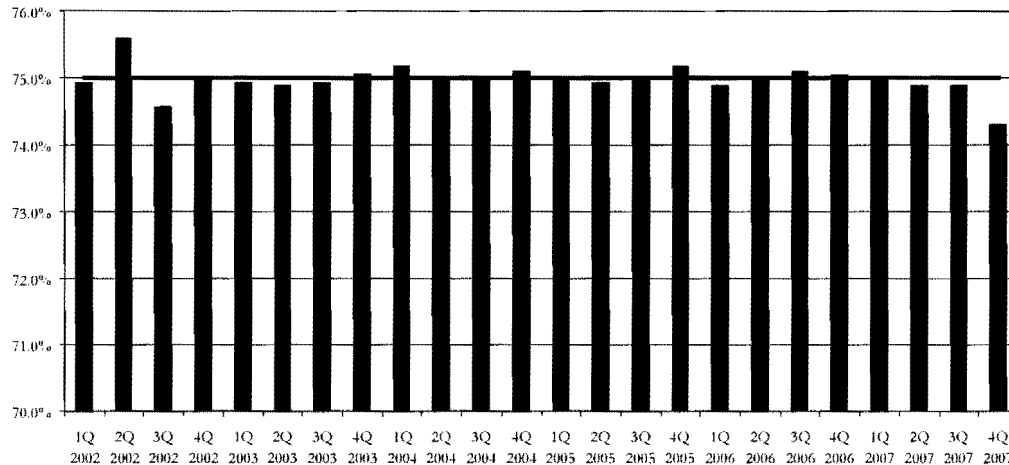
Restrictions

Dividends

The *American Water Subsidiary Dividend Policy* establishes the requirements for the payment of common stock dividends by American Water subsidiaries. American Water is a holding company whose principal asset is the common stock of its subsidiaries. This policy has been designed, according to American Water management, to provide American Water with the necessary cash to meet its obligations to its subsidiaries and shareholders. At the same time, it is designed to strike a balance between an appropriate capital structure for each subsidiary and maintenance of an appropriate dividend payout to shareholders. The *Regulated Utility Subsidiary* section of this policy discusses the payment of dividends by regulated utility subsidiaries, including PAWC. All dividend payouts made by PAWC must be approved in advance by its Board of Directors and associated dividend calculations are to be made in accordance with provisions of this policy. The latest common stock dividend-declaration resolution during audit fieldwork was presented at the July 26, 2007 meeting of PAWC's Board of Directors

Exhibit VIII-12 illustrates PAWC's dividend payments from 2002 to 2007 to its parent company expressed as a percentage of the relevant year's net income to common stock. The level of dividend payments has been within a reasonable range in that it is similar to, although possibly on the high side of, the net income percentage that other utility organizations typically pay out.

Exhibit VIII-12
PAWC Dividend Payments to American Water
2002 to 2007



Source: Information Response 729

Other Restrictions

PAWC's financial instruments, specifically its mortgage bonds, have fairly typical covenants, such as:

- ◆ With respect to amount and type of dividend payments
- ◆ Regarding sale of all, or substantially all, of company property subject to indenture
- ◆ With respect to payment of monies paid by trustee regarding monies held
- ◆ With respect to issuance of additional bonds
- ◆ Providing financial information to trustee on a periodic basis
- ◆ Providing default notice in the event of default

Other financial instruments include promissory notes to various entities, including American Water Capital Corporation and Pennsylvania Infrastructure Investment Authority (PENNVest), with fairly standard terms and conditions.

Schumaker & Company did not note any credit-rating triggers or provisions leading to collateral calls that carry the potential to unduly affect the regulated utility's liquidity.

B. Findings & Conclusions

Finding VIII-1 Cost allocation documentation was disjointed and poorly organized, which required Schumaker & Company auditors to meet with multiple individuals and to review multiple documents in order to understand how affiliate relationships and cost allocations are handled at American Water.

In its initial information requests, Schumaker & Company requested “any cost accumulation and assignment documentation” plus “any cost billing/allocation documentation, including any documentation describing methodologies, bases, and factors used for direct billing and/or cost allocation, and/or segregating regulated and unregulated costs, including (but not limited to) finance manuals, assignment policies, and cost-allocation manuals.” The response to these requests was a four-page document titled *Rationale for Allocation of Service Company Costs*, in which the cover sheet did not discuss *Tier One* allocation methodologies as part of the hierarchy for affiliate charges. The supporting documentation, however, did address such methodologies. In another initial information request, Schumaker & Company requested a “description of daily accounting standards and recordkeeping methods and procedures that support the daily operations between PAWC and its affiliates.” The response to this request was a three-page presentation that did not discuss overhead charges. Another three-page document was provided late in the audit, which discussed AWWSC expense categories, charging of AWWSC time and expenses, and the methodology for allocating regulated and non-regulated companies’ common costs. In Schumaker & Company’s opinion, none of these documents was a comprehensive cost-accumulation, assignment, and allocation manual.

Additionally, to obtain a detailed discussion of the 14 factors used for allocating *Tier One* charges, Schumaker & Company was required to subsequently request a “description of the Cost Allocation Committee (composition, mission/purpose) and actions taken, plus a resultant four- to five-page matrix of factors and associated rationales developed for segmenting regulated and non-regulated AWWSC costs.” The aim of this request was to obtain the “draft” suggested methodologies that were the basis for those that were eventually implemented. A discussion of these allocation factors was not part of the initial information responses.

These audit responses dealt only with AWWSC and not other American Water affiliates. To understand how affiliate charges were handled for other American Water affiliates, Schumaker & Company auditors had only the affiliate agreements and discussions with staff to document what was happening.

The lack of a cohesive set of comprehensive affiliate relationship and cost allocations documentation for all American Water affiliates presents an ongoing issue for American Water employees in understanding how affiliate transactions are supposed to work (or actually work) within the American Water organization. The lack of documentation also raises questions about American Water’s ability to consistently adhere to a set of guidelines, if the guidelines are not clearly specified.

Making our efforts even more difficult was the lack of centralization at American Water regarding responsibility for affiliate relationships and associated cost allocations. Although the AWWSC VP Planning & Reporting has oversight responsibility for cost allocations, our primary contacts for affiliate relationships and cost allocation discussions were the AWWSC VP Regulatory Programs and the AWWSC Southeast Region Finance Director.

Finding VIII-2 The cost-allocation methodologies impacting PAWC are generally reasonable, although the use of number of customers for allocating AWWSC costs among regulated utilities is essentially a simplification mechanism that is not based on cost-causative factors.

Although the methodologies currently used for affiliate charges involving PAWC are different for major affiliates, these methodologies are generally reasonable, as follows:

From PAWC to Affiliates

- ◆ *Lease of PAWC Office Space to AWWSC* – Rental charges are made to AWWSC on a per-square-foot charge basis. In 2004 (just before the latest agreement amendment was created in 2005), the rates were set at \$12.60 for office space and \$8.95 for mailroom space. These rates were based on a review of space lease, or available for lease, in the spring of 2004, which was conducted by one of the largest real estate firms in central Pennsylvania. These rates can be adjusted each year in proportion to the increase in the All Cities Consumer Price Index (CPI) for all Urban Companies, which is published by the Bureau of Labor Statistics of the United State Department of Labor. Additional rental charges are allocated to AWWSC based on its proportionate share of real estate taxes and assessments, building maintenance, and utilities. Also any leasehold improvements specifically requested by AWWSC are directly charged.
- ◆ *Provision of PAWC Furniture & Equipment to AWWSC* – For use of the furniture, equipment, and hardware/software provided by PAWC, AWWSC pays the sum of the following multiplied by the ratio of the aggregate of the total number of customers of PAWC plus the total number of customers of those other water companies for whom AWWSC provides electronic data-processing services and who use the equipment. That figure is then divided into the total number of customers of those other water companies from whom AWWSC provides services and uses the equipment.
 - Depreciation expense
 - A return on the equipment based on the pre-tax return authorized in PAWC's latest rate case before the PaPUC
 - All applicable sales taxes
- ◆ *Billing and Collection Services Provided to AWR by PAWC* – AWR receives payments directly from PAWC customers for these programs. In return, AWR pays PAWC for its expenses plus 15% to provide customer support and call center services for the water line program, customer support

dispatch and billing services for the sewer line program, and customer support and billing services for the in-home plumbing emergency protection services program. The 15% represents margin on the fully-distributed pre-tax costs to PAWC.

From Affiliates to PAWC

- ◆ *Line of Credit Fees and Interest Paid to AWCC on Intercompany Borrowings Paid to AWCC* – These costs are allocated as follows to PAWC and other American Water entities:
 - The costs incurred by AWCC in connection with its bank credit lines and short-term public borrowings are divided among co-participants in proportion to the maximum principal amount that each co-participant requests be made available to it during the course of a year.
 - The costs incurred by AWCC in connection with each long-term borrowing is divided among co-participants in proportion to the principal amount of that borrowing that is loaned to each co-participant.
 - The amount of AWCC's overhead costs are allocated among the co-participants in the same proportion as each co-participant's long-term and maximum requested short-term borrowing and investments in a calendar year relative to all of the long-term and maximum short-term borrowings and investments by all co-participants during the same year.
- ◆ *Purchase of GAC from ACS* – Charges are made to PAWC on a per-cubic-foot basis, with escalation of these unit prices typically occurring on a yearly basis.
- ◆ *AWWSC Services Provided to PAWC* – Charges are made to PAWC and other American Water affiliates as follows:
 - First, direct charges are made to a subsidiary or a group of subsidiaries based on time reporting; direct charges are made for services provided to an identifiable business unit or, for employees performing transactional services, on the basis of a sample period of detailed time sheet records.
 - Second, AWWSC costs are then split between regulated and non-regulated entities based on what American Water considers cost-causative factors, also referred to by American Water as *Tier One* charges. This was a new step that began in 2005 based on work performed by a cost-allocation committee with input from an outside consulting firm (Deloitte Touche).
 - Third, the number of customers is used to split regulated costs (and revenues) among the various utility organizations, also referred to by American Water as *Tier Two* charges. The number of customers at year end is used for allocations in the following year, unless significant changes occur. American Water management uses the number of customers for splitting costs among regulated entities, because all of its regulated customers are considered to receive essentially the same services.

Only portions of the AWWSC methodology are questionable, specifically those for *Tier Two* charges. The use of direct charges, whenever possible, over allocations for AWWSC charges is appropriate. Moreover,

Schumaker & Company normally prefers to see allocations made based on cost-causative factors. Ideally, the split not only between regulated and non-regulated entities (*Tier One*), but also between regulated entities (*Tier Two*) would be based on cost-causative factors. Specifically, the *Tier Two* methodology for AWWSC charges is questionable because the use of the number of customers to split regulated costs (and revenues) among the various utility organizations is theoretically incorrect. An exception is for those AWWSC functional areas where the cost-causative factor would be the number of customers.

Nevertheless, American Water management believes that the existing hierarchy with its associated methodologies is simpler and results in substantially the same amount of charges to regulated entities, as illustrated by the following historical changes. From roughly 1971 to 1989, American Water considered its cost-allocation hierarchy to be complex and confusing. After direct charges were considered, cost-causative factors were then used to split AWWSC costs. Then in 1989, simplification occurred with direct charges followed by number of customers for allocating costs. In 2005, as described above, a middle step was added. That is because American Water management believed that a non-regulated customer was not the same as a regulated customer. For example, where AWE provides O&M services to a municipality, it has only one customer. If customers were used to split costs between regulated and non-regulated entities, then regulated entities would be providing an unfair share of AWWSC costs.

Schumaker & Company concurs that, in this particular situation, little difference in actual allocations is likely, although it cannot be substantiated as part of this audit's scope. Because American Water has 14 cost-causative factors that it uses for allocating costs between regulated and non-regulated entities, as well as an associated system module for performing these allocations, it should be able to provide quantitative analysis as to the extent to which differences occur.

Finding VIII-3 Although American Water engaged an independent consultant in 2006 and 2007 to perform cost-to-market comparisons for AWWSC charges to three of its regulated utilities, it does not perform these comparisons on a regular basis.

Although American Water does not have a formal program for routinely and systematically comparing the use of AWWSC/affiliates versus that of outsourced vendors to ensure that PAWC is not being harmed by affiliate charges at cost rather than market, it has performed three such studies in other American Water states. Specifically, it studied Kentucky, West Virginia, and New Jersey in preparation for rates cases in those states. These 2006 and 2007 studies were undertaken to answer the following three questions concerning the services provided by AWWSC to each of these three states:

1. Was the regulated water utility charged the lower of cost or market for managerial/professional services provided by AWWSC during a 12-month test year?
2. Were the 12 months of AWWSC's customer accounts services, including those of the National Call Centers, reasonable?
3. Are the services the regulated water utility receives from AWWSC reasonably necessary for the provision of service to its customers?

Regarding question # 1, the independent consultant formed the following conclusions from these studies:

- ◆ The regulated water utility was charged the lower of cost or market for managerial and professional services during the 12-month test period.
- ◆ On average, the hourly rates for outside service providers were higher than AWWSC's hourly rates (ranging from 44% to 66% higher).
- ◆ The managerial and professional services provided by AWWSC are vital and could not be procured externally by the regulated water utility without careful supervision on the part of the regulated water utility. If these services were contracted entirely to outside providers, the regulated water utility would have to add at least one position to manage the activities of outside firms. This position would be necessary to ensure the quality and timeliness of services provided.
- ◆ If all the managerial and professional services now provided by AWWSC had been outsourced during the 12-month test period, the regulated water utility and its ratepayers would have incurred substantially additional expenses. Such expenses would have included the higher cost of outside providers and the cost of a regulated utility position needed to direct the outsourced work.
- ◆ The hourly rate comparison actually understates the cost advantages that accrue to the regulated water utility from its use of AWWSC. Outside service providers generally bill for every hour worked. AWWSC personnel, on the other hand, charge a maximum of eight hours per day, even when they work more. If the overtime hours of AWWSC personnel had been factored in to the hourly rate calculation, AWWSC would have had an even greater annual dollar advantage than the amounts cited in these studies.
- ◆ It would be difficult for the regulated water utility to find local service providers with the same specialized water industry expertise as that possessed by AWWSC staff. AWWSC personnel spend substantially all their time serving operating water companies. This specialization brings with it a unique knowledge of water utility operations and regulation that is most likely unavailable from local service providers.
- ◆ AWWSC fees do not include any profit markup. Only its actual cost of service is being recovered from the regulated water utility ratepayers.

Regarding question # 2, the independent consultant determined that the costs of AWWSC's customer accounts services, including those provided by the National Call Center, were within a reasonable range of the neighboring electric utility comparison group's average cost per customer. It was determined that this group of companies provided a reasonable size and scope proxy for comparison with the regulated water utility. During the 12-month test year, the customer accounts costs for the regulated water utility customers were compared to the average for neighboring electric utilities.

Regarding question # 3, the following conclusions were drawn by the independent consultant:

- ◆ The services that AWWSC provides are necessary and would be required even if the regulated water utility were, in fact, a standalone water utility.
- ◆ There is no redundancy or overlap in the services provided by AWWSC to the regulated water utility.

Based on the results of these studies, Schumaker & Company has no reason to believe that a similar study for PAWC would result in a different outcome, especially given the recent timeframe and location of these regulated water utilities. Nevertheless, as discussed in *Recommendation VIII-3*, American Water should continue to periodically perform these studies, including Pennsylvania in its investigations and analyses, even if not related to a rate case proceeding.

Additionally, AWWSC management provided the following examples where subsidiaries have opted not to use AWWSC to provide selected services:

- ◆ Many of the non-regulated entities do not receive AWWSC charges because they have their own groups to perform the same functions. If they request services not previously performed by AWWSC employees, then the split of costs between regulated and non-regulated entities kicks in. It is up to the AWWSC supervisor to have his or her employees use the appropriate codes.
- ◆ Michigan-American Water Company (MAWC) does not use call center services performed by Alton or Pensacola, as described in the Customer Service chapter. MAWC serves 4,000 water-only customers in Calumet, Michigan. Its staff performs not only call center activities but also other administrative tasks. MAWC management believed that it was not efficient to have Alton/Pensacola perform call center functions and have administrative staff not fully utilized.

However, no examples involving PAWC were provided.

Finding VIII-4 The AWWSC/PAWC affiliate agreement is not up to date and a new version has not been provided to the PaPUC for review and approval.

The AWWSC/PAWC affiliate agreement, as is, does not reflect the existing organizational structure. Therefore, some major services, such as legal, external affairs, and business development/sales activities, are provided by AWWSC to PAWC, even though they are not specifically listed in the current affiliate agreement. According to American Water management, the nomenclature for referencing such services has changed since January 1, 1989, when the affiliate agreement between AWWSC and PAWC was executed (subsequently approved by the PaPUC pursuant to an order dated January 12, 1989 at Docket No. G-880131). At the time, legal services were provided through the corporate secretarial function, external affairs were provided through the communication function, and business development was provided through the operation function. Nevertheless, the PaPUC should be provided an up-to-date list of existing major services provided by affiliates to PAWC.

Additionally, the affiliate agreement mentions direct charges to PAWC (Section 2.3) and allocation of costs to regulated water companies based on the number of customers (Section 2.4). It also addresses overhead associated with these two items (Section 2.5). It does not mention in any way the allocation of costs among regulated and non-regulated entities using cost-causative factors, referred to by American Water management as *Tier One* charges. American Water management indicates that no change in procedures has occurred with the addition of *Tier One* charges; however, Schumaker & Company disagrees with this conclusion.

Finding VIII-5 Ongoing training updates to AWWSC employees on timekeeping procedures, which could potentially impact affiliate charges, is not being provided.

In 2005, following the addition of *Tier One* charges to AWWSC's cost-allocation methodology, the Human Resources organization performed training for all AWWSC employees on cost-allocation policies, practices, and procedures. Since then, however, no training updates have been conducted. The potential for errors in applying AWWSC's timekeeping procedures is increased by not regularly training updates.

Finding VIII-6 Affiliate charges from RWE/Thames have been appropriately handled.

Over the last several years, various roles within the AWWSC organization were filled by individuals who were leant to American Water by either Thames Water International Services Limited (Thames) or RWE. In that capacity, these employees performed activities that were typically within the general framework of work provided by AWWSC. Costs for these employees performing work directly for the AWWSC were billed by Thames or RWE on an at-cost basis. They were then subsequently allocated by AWWSC to affiliated American Water system companies consistent with the general AWWSC formula allocation process.

Thames, an affiliate and wholly-owned subsidiary of RWE, provided services of expatriate employees to AWWSC, which amounted to \$1.67 million in 2006, \$3.63 million in 2005, and \$2.95 million in 2004. These amounts were allocated to subsidiaries and affiliated companies based on the general service company allocation, with PAWC being billed for \$472,195 in 2006, \$464,351 in 2005, and \$62,551 in 2004 for AWWSC roles filled by Thames employees. No charges were billed to AWWSC by Thames in 2007 or prior to 2004.

Management charges provided to American Water Works Company (parent company) by Thames amounted to \$1.4 million in 2006, \$9.2 million in 2005, and \$11.5 million in 2004. These charges were not allocated to American Water subsidiaries.

Finding VIII-7 Most activities undertaken for monitoring and ensuring the appropriate implementation of cost-allocation processes are reasonable; however, internal audits of affiliate transactions and the systems that are used for creating affiliate charges are not regularly performed.

According to American Water management, the following activities are undertaken for monitoring and ensuring the appropriate implementation of cost-allocation processes:

- ◆ Billing formulas are reviewed and updated annually by the corporate finance function to reflect current data relative to formula drivers, such as customer counts. This process ensures that the allocation of charges is conducted consistently with the composition of American Water's business.
- ◆ Because the most significant component of allocable costs is labor, the AWWSC time entry system requires approvals by managers who review time charges for appropriateness and accuracy.
- ◆ Upon processing all costs each month, the Shared Services team conducts a review of the general ledger and prepares account reconciliations to provide assurance that charges are properly distributed.
- ◆ A series of management reports are prepared for presentation through a financial reporting package that provides an additional level of review and analysis for AWWSC costs.
- ◆ When AWWSC bills are distributed, a bill review is conducted (under the direction of the finance officer of each recipient location) and any appropriate modifications are effectuated.

However, internal audits of affiliate transactions and associated cost allocations are not regularly performed, according to AWWSC management. Yet in the PaPUC's 2000 management audit of PAWC, it stated that the AWWSC Internal Audit (IA) function, at that time, performed periodic reviews of direct billing charges and cost allocations to/from AWWSC and PAWC, although IA reports were not made readily available to PAWC and other American Water operating companies.

Additionally, only two operational audits have been performed by AWWSC IA staff in the past five years, one in 2004 and one in 2005. In the report dated March 19, 2004, the Internal Audit organization noted that the PAWC Hershey office had recently become the Southeast Region center, which raised Internal Audit's concerns regarding the allocation of regional costs to business units within the region. It suggested that an inventory of AWWSC costs that might require allocation, and the processes and maintenance of associated records, might be a "worthy exercise" toward anticipating future questions that might surface. At that time, only expenses had been addressed; therefore, implementation of a complete allocation methodology was targeted for July 19, 2004. In the report dated November 22, 2005, this tendency was no longer an issue.

The PAWC-audited financial statements include an opinion by PricewaterhouseCoopers LLP that the balance sheet and related statements of income, capitalization, changes in common stockholders' equity,

and cash flows present fairly, in all material respects, the financial position of PAWC. The results of its operations and cash flows are also in conformity with accounting principles generally accepted in the United States. Getting this type of “clean” opinion, however, does not indicate that cost-accumulation, assignment, and allocation methodologies among various regulated and unregulated affiliates is being done in the best interest of PAWC ratepayers.

C. Recommendations

Recommendation VIII-1 Develop formal, comprehensive documentation for affiliate relationships and cost allocations, and assign the responsibility for affiliate transactions to the appropriate manager. (Refer to Finding VIII-1.)

Because American Water has many subsidiaries, such as PAWC, in the regulated utility industry, any entities having affiliate relationships and associated transactions should have formal, comprehensive documentation that fully describes how affiliate charges are handled. Also, unlike many utility organizations of similar (or larger) size, American Water does not appear to have a single point of responsibility for affiliate relationships and associated affiliate charges, including responsibility for the development of comprehensive documentation. Someone should be identified who has that responsibility. In the future when auditors are reviewing this area, it should be clearly delineated who the primary point of contact is—that individual who has responsibility for affiliate transactions and associated affiliate charges.

Recommendation VIII-2 Perform a detailed analysis to verify that the use of the number of customers for allocating AWWSC costs among regulated utilities reasonably approximates the use of cost-causative factors; subsequently make modifications, as appropriate. (Refer to Finding VIII-2.)

Schumaker & Company understands that number of customers is a straightforward, easily understood, and relatively inexpensive cost allocation factor to implement. Although it may be a simpler mechanism than cost-causative factors to implement, many utilities have found that use of cost allocation modules as part of technology systems negates the work of implementing use of cost-causative factors. PAWC, as a regulated utility, should be able to provide evidence to the PaPUC and PAWC’s ratepayers that number of customers is a close approximation to the use of cost-causative factors – and that one state’s customers are not advantaged or disadvantaged by American Water’s cost allocation methodology. Just because American Water “believes” that use of number of customers is reasonable does not make it so. Therefore, initially AWWSC and PAWC should perform a detailed analysis, perhaps on a test-year basis, to determine whether number of customers for allocating costs among regulated utilities is reasonable, and the results should be provided to PaPUC Management Audit staff as a follow-up to this audit. If

the outcome of this analysis indicates that number of customers does not approximate cost-causative factors, then AWWSC should make modifications, as appropriate. Subsequently, every three to five years (or more often if major changes to American Water's organization occur), American Water should revisit whether its methodology and associated factor(s) are appropriate.

Recommendation VIII-3 Regularly evaluate the cost of services provided to PAWC by its affiliates so as to verify that PAWC ratepayers are not being harmed by charging these services at cost rather than market. (Refer to Finding VIII-3.)

The use of studies by independent consultants is a reasonable approach to verify that ratepayers are not being harmed by charging these services at cost rather than market. However, because PAWC recently proposed a rate hike in 2007, Schumaker & Company was surprised that such a study has not recently been performed on behalf of PAWC ratepayers. Such studies should regularly be performed by American Water, not just before rate cases, but periodically to ensure the reasonableness of AWWSC's costs.

Recommendation VIII-4 Update the AWWSC/PAWC affiliate agreement, as necessary, and submit it to the PaPUC for review and approval. (Refer to Finding VIII-4.)

Because the current AWWSC/PAWC affiliate agreement is out of date (last filed and approved in 1989 or 19 years ago), at this point in time, it needs to be revised. Different actions are possible to satisfactorily address this recommendation, such as:

- ◆ PAWC could submit a revised affiliate agreement for review and approval to the PaPUC; however, the company is reluctant to do so, given that it operates in a multiple-state environment. Because similar agreements have been approved in other states, Schumaker & Company understands why American Water believes this alternative may not be desirable. However, if this path is chosen, then AWWSC/PAWC should consider revising its agreement structure such that organization structure and allocation factors are included as attachments to the agreement, rather than imbedded into the agreement body, making it easier for PAWC to notify the PaPUC when changes for these items occur, rather than requiring a full agreement resubmission for review and approval.
- ◆ PAWC could submit to the PaPUC an informal information update regarding its affiliate agreement and request a waiver from filing a revised affiliate interest agreement for formal review and approval. Then, if this waiver request is accepted by the PaPUC, whenever major changes to the AWWSC organization structure occur or to how affiliate charges are conceptually distributed, PAWC should revise its affiliate agreement and resubmit it to the PaPUC.

These alternatives go hand-in-hand with Schumaker & Company's recommendation to develop comprehensive documentation, as discussed previously in *Recommendation VIII-1*.

Regardless of which path the company takes, *Recommendation VIII-2* should be performed before the affiliate agreement is revised (or an information update is provided), so as to determine if number of customers is still a reasonable approximation for allocating costs to PAWC, as the results of this study could possibly impact the content of the affiliate agreement.

Recommendation VIII-5 Provide ongoing training updates to AWWSC employees on proper use of billing numbers for charging affiliates when reporting time. (Refer to Finding VIII-5.)

The use of proper billing numbers by AWWSC staff when reporting time is necessary to ensure that proper affiliate charges are made. This type of training should be periodically refreshed and provided to all AWWSC employees.

Recommendation VIII-6 Regularly conduct internal audits of affiliate transactions and associated cost allocations. (Refer to Finding VIII-7.)

American Water's internal audit function should routinely incorporate audits of affiliate transactions and the associated direct billing/cost allocations in its audit plan/schedule based on its risk assessment activities. The frequency for this type of audit must be factored into this analysis, although given that American Water is in the regulated utility industry, Schumaker & Company would expect that such audits should be performed no less than every three years or sooner, if significant changes occur.

IX. Diversity/EEO

This chapter addresses the diversity and equal employment opportunity (EEO) practices at Pennsylvania-American Water Company (PAWC) and addresses both employee and supplier diversity areas.

A. Background & Perspective

PAWC management indicates that its diversity vision is to create a culture where everyone feels valued, respected, and included. One part of the building block that makes up PAWC's diversity is its organizational culture, which management describes as one in which employees not only feel respected and included but also have an opportunity to develop and reach their full potential. (Refer to *Chapter VII – Corporate Culture, Management Structure, and Staffing Levels* for Schumaker & Company's discussion of American Water's and PAWC's corporate culture.) To foster such a culture, PAWC management indicates that it:

- ◆ Recognizes that a diverse workforce and views adds value to the organization.
- ◆ Openly communicates the importance of compassion, sensitivity, benevolence, inclusiveness, and kindness.
- ◆ Respects and encourages all employees based on their own identity, creativity, and originality.

In American Water's code of ethics (which governs PAWC employees as well as all other American Water employees), one of the basic tenets involves "conduct in the workplace," which states that "to meet this expectation, employees must comply with all company policies as well as all federal, state, and local laws. Examples include ensuring that all applicants and employees receive equal employment opportunity that is free from all forms of unlawful employment discrimination" Furthermore, under the *Equal Opportunity, Affirmative Action and Prohibition against Harassment* section of the code of ethics, the following paragraphs state:

"American Water is committed to complying with all federal, state, and local equal employment opportunity laws and ensuring that all applicants and employees receive equal employment opportunity that is free from all forms of unlawful employment discrimination. American Water employees must comply with all company policies."

"To this end, the company will not, and no employee is permitted to, take any of the following actions based on gender, marital status, race, color, national origin, religion, age, disability, veteran status, sexual orientation, or any other characteristic protected by law:

- Hire or promote a person or fail to hire or promote a person,

- Treat a person differently with regard to any other employment matters, including transfer, recruitment, selection for training, discipline, layoff, or rates of pay and other compensation,
- Harass any person or permit any harassment, including verbal, nonverbal, or physical attacks,
- Segregate or sponsor any function that segregates, except where respect for privacy based on gender is concerned, or
- Retaliate against anyone who makes a complaint about discrimination or harassment.”

“American Water is committed to ensuring an environment that respects the dignity and worth of each applicant and employee, and is free from all forms of unlawful employment discrimination and harassment. The American Water group of companies will not tolerate any such discrimination or harassment. This policy applies to all harassment arising out of the work environment whether in the office, at work assignments outside the office, at office-sponsored social functions, or elsewhere.”

“Employees at each level of the company are responsible for helping to ensure that harassment and discrimination do not occur by conducting themselves in accordance with American Water policy and by promptly reporting any observed harassment or discrimination. Adherence to these policies is a condition of employment at the company, and employees who violate them will be subject to appropriate disciplinary action, up to and including discharge.”

On its website, American Water states its diversity perspective as follows:

“At American Water, we see diversity as a vital element in creating an environment where differences are accepted, and are important to the company’s success. In March 2005, American Water appointed a Diversity Officer to help embed diversity into our culture and actions.”

“We will encourage, honor, and celebrate differences in our workforce, including race, gender, spiritual practice, age, nationality, physical capabilities, education, and personal style.”

In roughly the 1997–1998 timeframe, the American Water Diversity Council was established. Its focus was not only to attract a diverse workforce but also to gauge and retain a diverse cross-section of employees. Its composition included representatives from the Customer & Shared Business Services, External Affairs, Human Resources, Internal Communications, Legal, Maintenance & Operations Services, Meter Reading, and Operations organizations as well as the President of the Local Utility Workers union. According to American Water management, the Diversity Council was active for the first three years; however, from 2004 to 2006, it met nine times and it had not met since January 19, 2006 until early 2008. Additionally, some of the Diversity Council members and its associated Executive Sponsors have since left American Water and have not been replaced. Diversity Champions (not necessarily Diversity Council members) were assigned at various American Water organizations, including PAWC. The role of a Diversity Champion is to act as a catalyst for diversity throughout his or

her assigned organization by inviting, encouraging, and inspiring excellence with regard to diversity. The Diversity Champion for PAWC is the Manager of Government Affairs; however, her involvement in this role has been limited because of the lack of diversity initiatives undertaken.

Additionally, in 2006, diversity was one of the roughly 10 American Water performance targets, but it was not included as a 2007 target. (See *Chapter II – Executive Management, External Relations, and Human Resources* for further discussion about American Water strategic goals and performance targets.)

The American Water Chief Operating Officer (COO) also has been the Chief Diversity Officer (CDO) for the whole American Water organization since March 2005. His role as CDO involves:

- ◆ Being the executive sponsor and champion for initiatives like expanding eligibility for health care benefits.
- ◆ Making speeches that incorporate American Water's commitment to diversity, including discussions as part of "change partner network system," wherein, every two to four weeks, the COO has conference calls with cross-section of employees about company status. Diversity is one of many topics that may be discussed during these calls.
- ◆ Being the Diversity Council executive sponsor, although this group (as previously stated) is currently inactive.

About the same time as the RWE/Thames acquisition of American Water in 2003, American Water realized that it needed leadership at the top concerning diversity—diversity has a very narrow definition in Europe, primarily referring to inclusion of black and women employees and vendors. Because American Water has had many initiatives in the last few years, the COO opted not to initiate a diversity initiative. Rather, he chose to simply keep a lower profile and to begin taking actions to change American Water's culture. Some of these actions included:

- ◆ Developing a code of ethics
- ◆ Establishing an ethics hotline
- ◆ Providing respect training to employees
- ◆ Providing non-harassment training to employees

The COO works with the Human Resources (HR) and Communications organizations to create a company diversity image. In addition to incorporating occasional articles on diversity into American Water publications and providing employees with a diversity calendar, part of the "subliminal" message American Water wishes to achieve is through the use of pictures in these publications showing diverse individuals. In addition to some of the actions previously noted, one of the ways American Water infiltrates its diversity message is by making diversity visible to employees at the top of its organizations. As part of its mid 2007 reorganization, American Water hired or promoted female, black, and gay representatives into various senior management positions.

Examples of other key actions American Water management noted include:

- ◆ Making American Water a good place for young people to work by adjusting HR policies, such as adding a flexible work-time option.
- ◆ Investigating the possibility of expanding health care benefits to non-married couples, whether same sex or not.

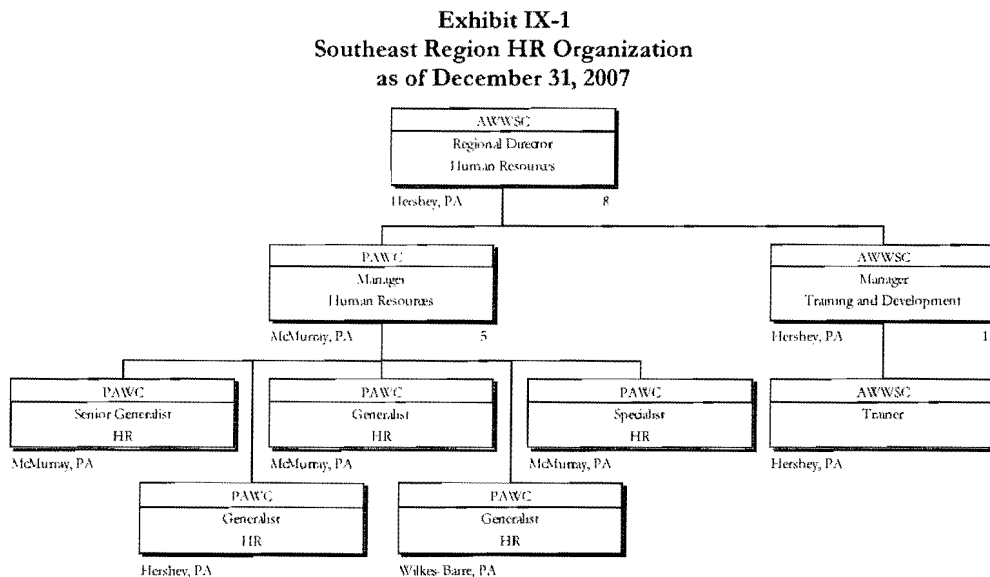
When the COO was asked what top items he would like to accomplish in the near term with regard to diversity, he indicated the following:

- ◆ Diversity coaching at American Water's executive level
- ◆ Merging diversity into the development program
- ◆ Embedding diversity into the performance management system
- ◆ Incorporating diversity measures into American Water's goals and objectives

Organization & Staffing

Employer Diversity

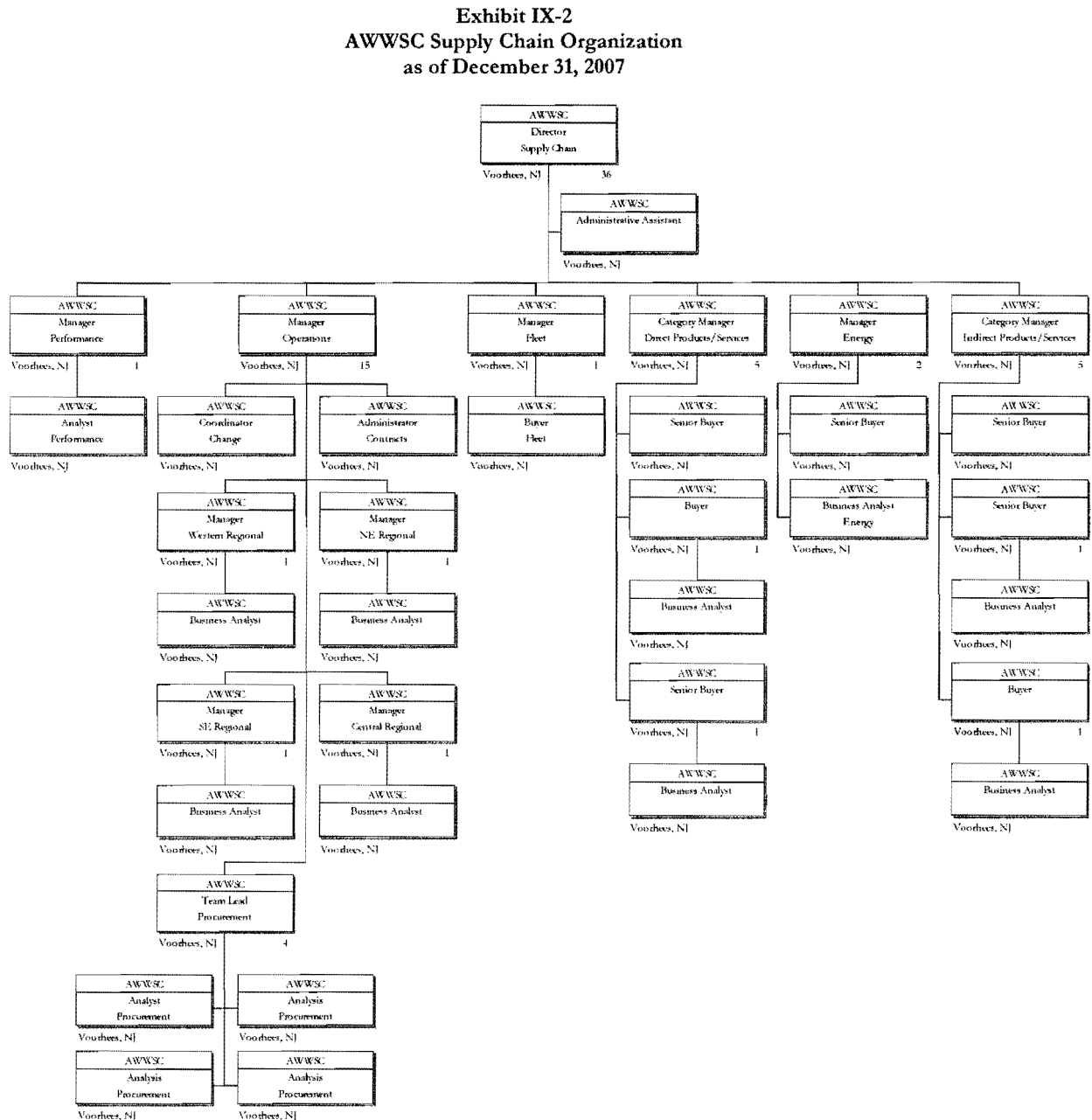
The HR Generalists within the AWWSC Southeast Region HR organization, shown in *Exhibit IX-1*, with assistance from corporate, are responsible for the PAWC affirmative action plan (AAP) /EEO-1 compliance reporting.



Source: Information Response 433

Supplier Diversity

The AWWSC Supply Chain organization, shown in *Exhibit IX-2*, is responsible for most American Water (including PAWC) supplier diversity activities.



Source: Information Response 257

Major Processes & Systems

Employer Diversity

American Water and all of its subsidiaries use the same national/regional recruiting resources to recruit employees. Specifically, in Pennsylvania, PAWC management indicates that to recruit females, minorities, veterans, and disabled persons PAWC uses the following:

- ◆ CareerBuilder.com
- ◆ Engineer-jobs.com
- ◆ Civilengineeringjobs.com
- ◆ Beyond.com
- ◆ CareerMVP.com
- ◆ Careerbank.com
- ◆ CPARecruiter.com
- ◆ Theladders.com
- ◆ Enviromentaljobsite.com
- ◆ Indeed.com
- ◆ Accounting.com
- ◆ Monster.com
- ◆ Financial Executive Networking Group
- ◆ Society of Wetland Scientists
- ◆ National Association for the Advancement of Colored People (NAACP)
- ◆ CareerBuzz
- ◆ League of Women Voters
- ◆ Office of Vocational Rehabilitation
- ◆ Harrisburg Young Professionals
- ◆ AHEDD (organization for employment of individuals with disabilities)
- ◆ Urban League of Pittsburgh
- ◆ Urban League of Broome County
- ◆ Lackawanna Human Development Agency
- ◆ Keystone Rehabilitation
- ◆ Progressive Community Center
- ◆ Scranton Business & Professional Women's Group
- ◆ Mental Health and Mental Retardation Program
- ◆ New Pittsburgh Courier (minority newspaper)
- ◆ PA Career Link
- ◆ Valleta Ritson & Co (minority recruiter)
- ◆ Employment Opportunity & Training Center (EOTC) (organization for individuals with disabilities)
- ◆ Native American Media
- ◆ Society of Women Engineers

- ◆ National Society for Black Engineers
- ◆ Department of Environmental Protection (DEP)
- ◆ Employee referrals
- ◆ Local newspapers

For example, American Water management indicates that CareerBuilder.com has 1,100 diversity partners. When job candidates search a diversity website, they are able to link to CareerBuilder.com, where they have access to American Water job postings.

Supplier Diversity

The administration of the supplier diversity program is the responsibility of the Supply Chain organization, although all American Water employees are expected to work as a team to actively support and implement the program.

American Water has an informal policy on supplier diversity, which has been approved by its COO. American Water Supply Chain management indicated that it anticipates it will become a written formalized policy/practice in 2008. This policy states that it is an American Water course of action to encourage and afford opportunities to diverse suppliers (including but not limited to women business enterprises (WBEs), minority business enterprises (MBEs), and disabled veteran business enterprises (DVBES), which together are referred to as WMDVBES), while simultaneously ensuring that the best combination of quality, service, and price is provided in accordance with the highest ethical and professional standards. Although similar in focus to many supplier diversity programs, Supply Chain management indicates that it encourages participation by other diverse suppliers, such as disabled non-veteran organizations. However, it does not have specific initiatives in place at this time for these other groups

American Water's philosophy is to put WMDVBE suppliers at an equal basis with other vendors, through activities such as sourcing events. The key performance indicators (KPIs) for the AWWSC Supply Chain organization include participation in a pool of potential vendors by WMDVBE suppliers. They do not include spend targets with WMDVBE suppliers, although Supply Chain tracks this spend, or information about inclusion of WMDVBE suppliers and if such suppliers (as prime contractors) are awarded contracts. Use of diverse subcontractors is not reported by American Water's vendors. Use of WMDVBE suppliers at the national level is often at the subcontractor level, with more WMDVBE suppliers at the prime contractor level occurring at the regional level.

Vendors and contractors that have satisfactorily met the requirements for inclusion in the bidding process are invited to submit bids. The Supply Chain organization recently established in 2006 that at least one MWDVBE supplier should be included in every strategic sourcing process administered by the department. The bid format may consist of a request for sealed bids, an electronic request for proposal (RFP), or a request for quote (RFQ), or it may include participation in an online reverse auction. A bid package is forwarded to vendors or contractors to complete and return in accordance with the bid documents. Following the bid-opening session, during which bids are opened and responses are

documented, an analysis of the bids is prepared and a determination of the apparent low bidder is made. Subsequent vendor or contractor contact is made to discuss awarding of the agreement or contract for the specific work.

The Supply Chain organization has a standard practice document relative to the receiving and opening of competitive bids for strategic sourcing. It also has a sample RFP template; however, other functions, such as Operations Services (for engineering consulting and capital design/build construction projects), follow a similar, although not exact, protocol. Those bids processed by Operations Services (not processed by Supply Chain) typically include only major capital projects that have not been pre-purchased by Supply Chain. Most routine projects, such as main extensions, tank construction, small main replacements, paving contracts, and others are typically processed by Supply Chain through master service agreements or blanket purchase orders.

In 2006, American Water's Supply Chain organization was a member of the National Minority Supplier Development Council (NMSDC) and gained access to that council's database of minority suppliers (called MBISYS). Supply Chain management anticipated such access would help expand the number of MWDVBE suppliers invited to bid on American Water RFPs, and subsequently actually used. American Water dropped its NMSDC membership in 2007 because it found that other databases, especially its own internal databases, were more useful. In future years, however, Supply Chain management indicates that American Water will likely join NMSDC again to take advantage of speakers/education and other benefits. Also, PAWC, through its parent company, maintains a membership with the National Minority Supplier Development Council.

For most Operations Services bids, potential diverse suppliers (usually subcontractors) contact PAWC. PAWC does not actively pursue such suppliers' involvement, although they routinely advertise prequalification requirements when advertising large projects.

The Supply Chain organization holds quarterly meetings to review existing MWDVBE efforts in Pennsylvania and across American Water's other service territories. Supply Chain management believes that these meetings serve as a great vehicle for best practice sharing and benchmarking. That is because they are attended by Supply Chain managers from each of American Water's service regions, as well as other American Water groups, including a representative of the Military Services group, the Supply Chain Operations Manager, two Supply Chain Analysts, and a Supply Chain Strategic Sourcing Senior Buyer. Other outreach efforts, such as attendance at conferences, fairs, forums, and speaking engagements at meetings, focused on minority participants.

Statistical Data

Employer Diversity

Diversity Composition

Exhibit IX-3 shows PAWC's diversity composition by gender and race on December 31, 2006, as reported by PAWC in its 2006 Pennsylvania Public Utility Commission (PaPUC) diversity report. (See *Exhibit IX-5* for a discussion of trends in PAWC data.)

Exhibit IX-3
Diversity Composition of PAWC Employees
as of December 31, 2006

Job Categories	Overall Totals	Male						Female					
		Number of Employees					American Indian or Alaskan Native	Percentage of Employees					American Indian or Alaskan Native
		White	Black	Hispanic	Asian or Pacific Islander	American Indian or Alaskan Native		White	Black	Hispanic	Asian or Pacific Islander	American Indian or Alaskan Native	
Officials and Managers	176	146	4	0	0	0	0	24	2	0	0	0	0
Professionals	65	37	2	0	0	0	0	25	1	0	0	0	0
Technicians	4	3	0	0	0	0	0	1	0	0	0	0	0
Sales Workers	0	0	0	0	0	0	0	0	0	0	0	0	0
Office and Clerical	60	6	0	0	0	0	0	50	4	0	0	0	0
Craft Workers	251	217	7	1	0	0	0	25	0	1	0	0	0
Operatives	388	313	19	8	0	0	0	44	1	3	0	0	0
Laborers	1	1	0	0	0	0	0	0	0	0	0	0	0
Total	945	723	32	9	0	0	0	169	8	4	0	0	0

Source: Information Response 610 (2006 PaPUC Report)

Exhibit IX-4 shows PAWC's diversity composition by gender and race on December 31, 2007, as reported by PAWC in its 2007 PaPUC diversity report. While PAWC's total employees increased by 41 over 2006, the percentage of women and minorities decreased.

**Exhibit IX-4
Diversity Composition of PAWC Employees
as of December 31, 2007**

Number of Employees											
Job Categories	Overall Totals	Male					Female				
		White	Black	Hispanic	Asian or Pacific Islander	American Indian or Alaskan Native	White	Black	Hispanic	Asian or Pacific Islander	American Indian or Alaskan Native
Officials and Managers	171	148	4	2	0	0	17	0	0	0	0
Professionals	42	25	1	0	0	0	15	1	0	0	0
Technicians	3	1	0	0	0	0	2	0	0	0	0
Sales Workers	0	0	0	0	0	0	0	0	0	0	0
Office and Clerical	46	7	0	0	0	0	37	2	0	0	0
Craft Workers	295	256	10	3	0	0	25	0	1	0	0
Operatives	428	356	17	7	0	0	45	2	1	0	0
Laborers	1	1	0	0	0	0	0	0	0	0	0
Total	986	794	32	12	0	0	141	5	2	0	0

Percentage of Employees											
Job Categories	Overall Totals	Male					Female				
		White	Black	Hispanic	Asian or Pacific Islander	American Indian or Alaskan Native	White	Black	Hispanic	Asian or Pacific Islander	American Indian or Alaskan Native
Officials and Managers	100.0%	86.5%	2.3%	1.2%	0.0%	0.0%	9.9%	0.0%	0.0%	0.0%	0.0%
Professionals	100.0%	59.5%	2.4%	0.0%	0.0%	0.0%	35.7%	2.4%	0.0%	0.0%	0.0%
Technicians	100.0%	33.3%	0.0%	0.0%	0.0%	0.0%	66.7%	0.0%	0.0%	0.0%	0.0%
Sales Workers	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Office and Clerical	100.0%	15.2%	0.0%	0.0%	0.0%	0.0%	80.4%	4.3%	0.0%	0.0%	0.0%
Craft Workers	100.0%	86.8%	3.4%	1.0%	0.0%	0.0%	8.5%	0.0%	0.3%	0.0%	0.0%
Operatives	100.0%	83.2%	4.0%	1.6%	0.0%	0.0%	10.5%	0.5%	0.2%	0.0%	0.0%
Laborers	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	100.0%	80.5%	3.2%	1.2%	0.0%	0.0%	14.3%	0.5%	0.2%	0.0%	0.0%

Source: Information Responses 708, 789, and 790 (2007 PaPUC Report)

Although information included in PaPUC reports are as of December year end, AAP data has typically been as of August of each year. (Slight differences between PaPUC and AAP reporting percentages may occur due to the different points in time when percentages are calculated; plus, AAP data uses information only on locations over 50 employees.)

To see the differences by PAWC geographical region, for example, one must look at AAP data. At PAWC, the company segments its AAP data into three geographical regions, specifically the Southeast, West, and Northeast regions. Additionally over 90% of the jobs offered by PAWC fall into the Officials and Managers, Craft Workers, and Operatives categories. The labor force census data for these categories at PAWC in the Hershey/Harrisburg, Wilkes-Barre/Scranton, and Pittsburgh areas, which roughly equate to the Southeast, Northeast, and West areas, show percentages of females and minorities in the labor force that are higher than what PAWC employs. Based on 2006 PAWC data, for example, the profile of women and minorities in PAWC's workforce relative to the labor force in the Southeast, Northeast, and West geographic areas was as follows:

- ♦ *Women* – In each area (as well as Pennsylvania in total), the percentage of females in the labor force for PAWC’s major job codes is between 21.4% and 25.1%. These figures are greater than PAWC’s overall 12.3% figure or its percentage by PAWC area, which was 16.2% (Southeast), 6.6% (Northeast), and 13.9% (West). (Percentages were derived by dividing the number of women employees in these job categories by the total number of employees in the same job codes.)
- ♦ *Minorities* – In each PAWC area, the percentages of minorities in the labor force in PAWC’s major job codes are approximately 9.6% (Southeast), 2.9% (Northeast), and 6.4% (West). For Pennsylvania (in total) minorities in these job codes in the labor force represent approximately 10.7% and for the three PAWC areas where PAWC recruits employees the total is 6.4%. For PAWC, its percentage by area was 4.9% (Southeast), 2.1% (Northeast), and 7.0% (West), or approximately 5.4% overall in Pennsylvania. (Percentages were derived by dividing the number of minority employees in these job codes by the total number of employees in the same job codes.)

This state-wide data, above, does not align exactly to the communities from which PAWC recruits. For example, state-wide data includes Philadelphia. This urban center contains a higher percentage of minorities than PAWC’s service territory and is not a market from which PAWC presently recruits employees. This data is, nonetheless, a starting point for understanding how well the PAWC workforce reflects the demographic make-up of the state and regions in which it operates.

Furthermore, Schumaker & Company makes the point in *Recommendation IX-5* that PAWC should look more broadly than its local labor market when recruiting – even when they are considered fully utilized and compliant within a specific job category.

Exhibit IX-5 gives some historical perspective on PAWC’s composition of employees by gender and race, using its AAP data. (Because this data is from August of each year, it will not necessarily agree with PAWC’s PaPUC diversity report. A primary reason for the difference in figures is the movement of existing staff from AWWSC to PAWC due to reassignment and reorganization.)

Exhibit IX-5
PAWC Consolidated AAP Data
2004 to 2006
(as of August of Each Year)

	2004			2005			2006		
	Females	Males	Total	Females	Males	Total	Females	Males	Total
PAWC-Consolidated									
Black	10	39	49	8	35	43	6	31	37
Hispanic	3	8	11	2	8	10	2	9	11
Asian	0	0	0	0	0	0	0	0	0
American Indian	0	0	0	0	0	0	0	0	0
Minority	13	47	60	10	43	53	8	40	48
White	176	781	957	138	687	825	149	699	848
Total PAWC-Consolidate	189	828	1017	148	730	878	157	739	896

Source: Information Response 196 (PAWC Consolidated AAP Data)

Equal Employment Opportunity Commission Complaints

From 2003 to 2007, PAWC had nine Equal Employment Opportunity Commission (EEOC) complaints against it. At 2007 year end, two complaints were withdrawn, four complaints were dismissed (although one was issued the right to sue and the complaint is pending in U.S. District Court), and three complaints are pending.

Supplier Diversity

The Supply Chain organization cannot systematically identify spend or suppliers under agreement that are specific to PAWC prior to 2005. That is because the existing AWWSC enterprise resource planning (ERP) system did not track this information prior to 2005. (Any dollar figures provided in subsequent exhibits, such as *Exhibit IX-7*, were calculated for prior years via another means; however, the Supply Chain organization was established in 2004 and does not know how 2002 to 2004 figures were developed.) The number of suppliers under agreement through the Supply Chain organization and the percentage held with women and minorities for PAWC goods and services purchased for the years spanning 2005 through 2007 are shown in *Exhibit IX-6*.

Exhibit IX-6
Number of PAWC Agreements with Women and Minority Vendors
2005 to 2007

Year	# of Suppliers under Agreement	% of Women and Minority Vendors
2007	265	11.70%
2006	275	11.64%
2005	280	10.71%

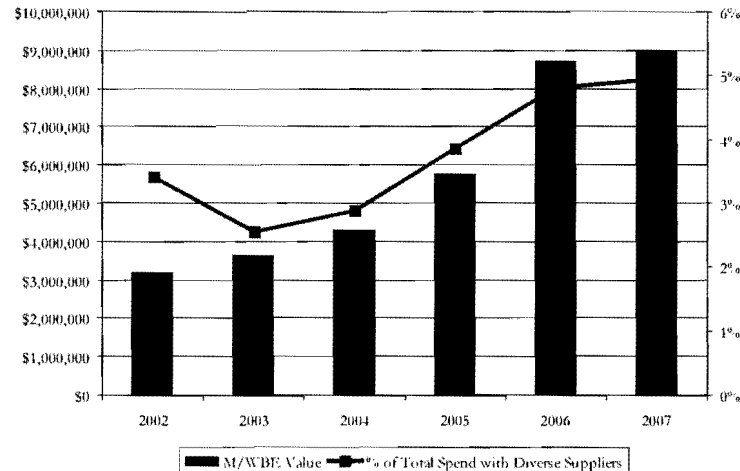
Source: Information Responses 200 and 785

In American Water's JD Edwards address book of WMDVBE suppliers, it lists approximately 130 potential WMDVBE vendors that can potentially provide services to PAWC. In 2007, for example, 31 women and minority suppliers had contracts involving PAWC or 22.3% of the 130 potential WMDVBE vendors (11.70% times 265).

From 2002 through 2007, PAWC spent approximately \$34.5 million with diverse suppliers, overwhelmingly with WBE suppliers. *Exhibit IX-7* illustrates PAWC's annual spend from 2002 through 2007, which increased approximately 183% over the six-year period.

Exhibit IX-7 also shows the percentage of W/MBE spend to total PAWC spend over the same time period.

Exhibit IX-7
Annual Spend Value and Percentage of Total Spend by PAWC with M/WBE Suppliers
2002 to 2007



2006 figures do not agree with the PaPUC report for same year, as the 2006 PaPUC report excluded self-certified MWDVBE organizations.
Source: Information Responses 788 and 834

As shown, diversity spend at PAWC has been generally increasing over this time period, despite American Water changing its reporting of WMDVBE spend in 2006 to require certification proof, as described further in *Finding IX-8*.

B. Findings & Conclusions

Finding IX-1 **The American Water/PAWC diversity program is primarily policy and affirmative-action-compliance oriented.**

PAWC appears to meet all federal EEO/affirmative action requirements. In fact, PAWC successfully completed three OFCCP audits (one in each of the three geographic areas) in the last two years, and was found to be in full compliance. In addition, American Water and PAWC management state that their policies show their commitment to diversity. Each new employee receives a copy of these policies on his or her first day of employment with PAWC to foster a culture of inclusion. PAWC views those policies that are most relevant to its diversity program as:

- ◆ Alternative work schedule policy
- ◆ Educational assistance plan
- ◆ Employees' guide of conduct
- ◆ EEO policy
- ◆ Harassment-free workplace policy

- ◆ No retaliation policy
- ◆ System-wide staffing policy
- ◆ Violence-free workplace policy

The company points to its offering of a training program called “respect.” The objectives of the Respect Program were:

- ◆ Define/discuss what is meant by mutual respect in the workplace, and why it is important.
- ◆ Define harassment and have a working knowledge of the company’s policies against harassment.
- ◆ Identify unacceptable behavior and be familiar with employee’s responsibility when confronted with the behavior.
- ◆ Understand employee/supervisor role and responsibility for ensuring that our workplace is free of harassment.
- ◆ Understand the legal implications both business and personal.
- ◆ Describe the complaint procedure and how it works.
- ◆ Describe the company’s policies on “no retaliation.”

This program utilizes small group discussions of case studies to review the definitions, practice responses, and list harassing behaviors. A 23 minute video is shown that reviews the types of harassment that may occur in the workplace that employees may not have been aware of. Discussion follows the video regarding employee/supervisor reactions. In addition, laws pertaining to harassment are reviewed and there is discussion of what it may cost both in actual dollars as well as costs to the human spirit is also discussed. Finally, prevention measures are reviewed and discussed, followed by a summary of all key points.

Preventing harassment in the workplace is an important goal and this training appears to be well designed. But preventing harassment and avoiding its legal and financial consequences does not, in and of itself, constitute a commitment to diversity. It is one step in creating an inclusive workplace and a component of a comprehensive diversity initiative.

It appears that the company’s diversity commitment does not extend beyond adherence to policies, avoidance of harassment, and the creation of affirmative action plans and EEO-1 reports. Schumaker & Company found little to suggest that the company was committed to implementing a full-fledged diversity initiative. Nondiscrimination and the recruitment, promotion, and retention of members of “protected classes” are important goals, but they fall short of a commitment to diversity.

Dr. Roosevelt Thomas, Jr., perhaps the foremost authority on workplace diversity, was the first to argue for a strategic approach to diversity. He suggested that a diverse workforce and an inclusive organizational environment were, in fact, strategic advantages. He cites improved decision-making, the ability to attract and retain top talent, and a more fully engaged workforce as examples. More recently, Dr. Thomas has suggested that diversity is “the differences, similarities, and related tensions that exist in

any mixture.” Dr. Thomas describes diversity management as “making quality decisions” in the midst of these “differences, similarities, and tensions.”

As such, companies that approach diversity as a competitive advantage have invested in initiatives that foster inclusion, employee engagement, and leadership development. Diversity leadership is often a core leadership competency. Workplace practices aimed at inclusion and engagement are valued and widespread. We find no such practices at PAWC.

Finding IX-2 Employee location data used for EEO-1 reporting from American Water’s JD Edwards human resources information system (HRIS) are often incorrect, thereby causing the company to conduct a manual verification process.

An HR Analyst in the AWWSC Financial Shared Services group extracts employee data from JD Edwards and is entered into Excel pivot tables. The data is then distributed to regional directors to be broken down by location and verified by local HR staff. Such verification is required largely because the EEO-1 reporting mechanism in JD Edwards does not work correctly at American Water and the company is not sure why.

We have discussed Human Resources’ data-integrity problems in *Finding II-11* from *Chapter II – Executive Management, External Relations, & Human Resources*. The problems with EEO-1 reporting appear to result, in part, from incorrect use of data codes when entering employee information and also from the fact that prior to 2007 location codes were not stored in the JD Edwards system.

Efforts to enhance the JD Edwards HRIS system have been scaled back while the company considers implementing a new ERP system. Schumaker & Company was provided assurances that the efforts to enhance data integrity in JD Edwards would continue, even if functional enhancements are delayed or cancelled.

Finding IX-3 PAWC and American Water do not have standard processes and use inconsistent methods for preparing affirmative action utilization and EEO-1 reports, which leads to reporting errors.

At American Water, reporting of data is done by location, as required by the U. S. Equal Employment Opportunity Commission, for locations with 50 or more employees. For locations with fewer than 50 employees, data are grouped together without reference to their reporting location. Therefore, because some PAWC employees report to a location with fewer than 50 employees, reviewing figures for all PAWC locations may not include all of the company’s employees.

Additionally, American Water has handled the development of AAP/EEO-1 reporting data differently over the past few years, thereby making comparison between years difficult. Some reasons why include:

- ◆ For 2005 and 2006, PAWC's EEO-1 reporting was "as of August 31," while its affirmative action plan was dated December 31 for each year. In 2007, this discrepancy appears to have been rectified. The data reported in the 2007 EEO-1 will be "as of August 31" and the same data will be used as the basis for the 2008 affirmative action plan. Schumaker & Company was not able to confirm this change, because the 2008 plan was not complete at the time of this report.
- ◆ For 2005 and 2006, the three Pennsylvania reporting locations (Northeast, West, and Southeast) were handled differently. PAWC and AWWSC employees are included in PAWC's AAP data for the Northeast and West areas. These AWWSC employees are also included in AWWSC's AAP data. AWWSC employees in the two Pennsylvania areas are not necessarily dedicated 100% to PAWC, but they were included because they report to a Pennsylvania office location. For Hershey (in the Southeast area), reportedly only PAWC employees were included in PAWC's AAP data and no AWWSC employees were included. However, in our review of 2006 data, Schumaker & Company found at least one case where an AWWSC employee was included. (This is further evidence of the location data integrity problem noted in *Finding IX-2*.) Then in 2007, American Water began having employees included in only one AAP, specifically in the location to which they report. It is simply too early to tell if the company has fully resolved its inconsistent methods, double reporting, and inaccurate data problems.

Furthermore, AWWSC staff in the Human Resources organization has a standard checklist for the creation of the AAP/EEO-1 reporting data; however, one of the steps (local HR Generalists to review/validate locations and submit issues) is handled differently, even within the three major Pennsylvania areas, as shown in *Exhibit IX-8*.

Exhibit IX-8
Location Validation Activities for AAP/EEO-1 Reporting by Area
as of December 31, 2007

Southeast Area	Northeast Area	West Area
Receive spreadsheet report from HR at Voorhees (includes all employees in locations included in area)	Receive spreadsheet report from HR at Voorhees (includes all employees in locations included in area)	Receive spreadsheet report from HR at Voorhees (includes all employees in locations included in area)
Verify location code of each individual employee shown on report	Download list by name so HR Generalist can compare against spreadsheet	Focus on situations like route code equal to "mail" because those employees get their paycheck at home rather than at their location
E-mail corrections to HR in Voorhees	Verify location code of each individual employee shown on report	Add column to spreadsheet to highlight changes
	Modify spreadsheet to reflect changes or deletions	HR Manager reviews spreadsheet and discusses with HR Generalist as needed
	E-mail summary of changes and corrected spreadsheet to HR in Voorhees	E-mail summary of changes and corrected spreadsheet to HR in Voorhees

Source: Interviews 145, 146, and 147

While these differences appear to be small, they reflect the lack of standardization and offer opportunities for error.

Finding IX-4 No senior executive or officer of American Water reviews and approves the EEO-1 report prior to submittal to the federal government.

Submission of the Federal EEO-1 report requires a certification by an *authorized official* of American Water. Authorized official is not well defined in the law, but Schumaker & Company believes that certification should be made by an American Water officer. Schumaker and Company further believes the Vice President of Human Resources is the most logical choice for this task

In *Finding IX-3* we noted that PAWC uses inconsistent methods of validating the data for the EEO-1 report. The data for each location (for all of American Water) that has been corrected using inconsistent methods is submitted to the HR Analyst at AWWSC Shared Services. The HR Analyst enters it into the federal online report. Once all locations have been reported and entered, she submits the report to U.S. Equal Employment Opportunity Commission. There is no review of the report by any American Water senior manager or officer.

Finding IX-5 American Water has developed a comprehensive diversity plan but has failed to effectively implement it.

In 2005, American Water initially developed a nine-month diversity plan (through its Diversity Council) but push-back from management (given the many other initiatives that were underway) resulted in the Diversity Council revising it to a 27-month plan with targets starting in January 2006 and continuing through March 2008. As of September 2007, however, only a few of the key targets have been met. The COO expressed intentions to add Top 5 items (not yet implemented from the 27-month diversity plan) to American Water's performance targets in fiscal year (FY) 2008. Then, in FY2009, he hopes to include measures (as described in the plan) to targets.

Exhibit IX-9 illustrates the progress made against the diversity-plan targets.

Exhibit IX-9
Summary of American Water Progress against Diversity Plan
as of December 31, 2007
Page 1 of 3

LEADERSHIP ACCOUNTABILITY			
No.	Diversity Target	Target Date	Status
1	Integrate diversity targets into American Water's region and business-unit balanced scorecards, business process reengineering (BPR), Executive Management Team (EMT) meetings, and individual performance objectives for EMT members.	1Q '06	Done
2	Identify diverse candidate slates in sourcing for current executive (ML 1-3) openings.	1Q '06	Ongoing
3	Integrate diversity plan with business strategy.	2Q '06	Not Done
4	EMT participates in a group Diversity Awareness workshop.	2Q '06	Partially Done (a)
5	Identify and appoint local Diversity Champions.	2Q '06	Done
6	Regional Presidents, CEO, COO, and Chief Growth Officer (CGO) participate in quarterly diversity coaching.	3Q '06	Not Done
7	EMT members partner with their local Diversity Champion and visit a local business that has been cited for diversity excellence to understand best practices.	4Q '06	Not Done
TALENT MANAGEMENT			
8	Integrate a diversity focus within the company-wide succession-planning process.	1Q '06	Done
9	Develop a recruitment and selection process/tools that enable diverse and balanced slates.	2Q '06	Done
10	Assess the current workforce representation (e.g., age, gender, race, disability) company wide.	4Q '06 Annually	Not Done
BUSINESS GROWTH			
11	Add diversity factors in bid review process.	1Q '06 (Ongoing)	Not Done
12	Implement standard proposal language that supports diversity.	2Q '06	Not Done
13	Review diversity implications within the business growth plan.	4Q '06	Not Done
AWARENESS BUILDING			
14	Enhance procurement tracking of relationship with women, minority, and disabled-owned businesses.	2Q '06 (Bi-annually)	Done
15	Integrate diversity awareness into procurement practices.	2Q '06	Done
16	Incorporate diversity awareness focus into EMT meeting agendas.	3Q '06 (Quarterly)	Not Done

Source: Information Responses 258, 355, and 786

(a) Held three-hour awareness discussion at EMT meeting

Exhibit IX-9
Summary of American Water Progress against Diversity Plan
as of December 31, 2007
Page 2 of 3

No.	Diversity Target	Target Date	Status
EMPLOYEE ENGAGEMENT			
17	Identify and integrate three to five core diversity messages (relative to key company objectives) into executive/leadership road shows and internal communications.	2Q '06 (Ongoing)	Done
18	Identify diversity trends in exit interview information.	2Q '06	Not Done
19	Enhance employee work/life balance by augmenting current sick-day policy to include "family" sick days.	3Q '06	Done
LEADERSHIP ACCOUNTABILITY			
20	Align diversity questions on next employee survey with key diversity targets.	1Q '07	In-Progress
21	Appoint a Diversity Manager/Coordinator.	2Q '07	Not Done (b)
TALENT MANAGEMENT			
22	Incorporate diversity awareness focus into regional/AWE leadership meeting agendas.	1Q '07 Quarterly	Not Done
EMPLOYEE ENGAGEMENT			
23	Encourage increased employee involvement in company-sponsored social-responsibility activities.	1Q '07	Not Done
24	Enhance employee work/life balance by developing a policy that provides consistent guidelines for telecommuting (where feasible).	2Q '07	Not Done
25	Enhance employee work/life balance by developing a policy that provides consistent guidelines for variable/flex time (where feasible).	2Q '07	Done
AWARENESS-BUILDING			
26	Integrate diversity into key American Water development programs.	1Q '07 (Ongoing)	Not Done
LEADERSHIP ACCOUNTABILITY			
27	Create a recognition program that reinforces individual and team performance on effective achievement of business performance targets—that enhance diversity target achievement.	1Q '08	Not Done
AWARENESS-BUILDING			
28	Perform local and corporate review of customer survey feedback in current footprint to determine if there are diversity implications.	1Q '08 Annually (Ongoing)	Not Done
29	Review corporate strategy for sustainable giving that builds on the brand and increases recognition of American Water.	1Q '08 (Ongoing)	Not Done

Management Actions = EMT/Regional Presidents/ Local Line Manager **Actions**

(b) Director, Talent Management to assume responsibilities on March 31, 2008

Source: Information Responses 258, 355, and 786

Exhibit IX-9
Summary of American Water Progress Against Diversity Plan
as of December 31, 2007
Page 3 of 3

No.	Diversity Target	Target Date	Status
EMPLOYEE ENGAGEMENT			
30	Establish process for enabling employee input on enhancing diversity.	1Q '08	Not Done
31	Increase diversity of employees (e.g., union/non-union, age, race, gender) in development programs/activities.	1Q '08	Not Done

Management Actions = EMT/Regional Presidents/Local Line Manager Actions
Source: Information Responses 258, 355, and 786

In early 2007, an internal assessment report of diversity at American Water (performed by one of the regional HR Directors on behalf of the COO) stated the following:

“Because there are so many items, it is hard for some to get their heads around what we as a business are specifically doing and it appears that not much is happening. In reality, that is not the case. We are not where we would like to be, but much has been accomplished and there are projects currently underway, as well. To that end, I would like to propose that we look at and talk diversity in another way, so that it becomes clearer to people what we really are out to accomplish as well as the successes that we are having along the way.”

This report went on to state the following:

“As a business, we have been reviewing and making adjustments to various policies that impact diversity. As each has come up for review, we have critically looked at them with a ‘true diversity lens’ and we have made business changes. The ones that come to mind immediately are our policies on a ‘Harassment Free Workplace’ and our policy on ‘Alternate Work Schedules.’ In addition, there are several other policies that are currently being worked on. The challenge going forward will be to ensure that the policies are being embraced and implemented throughout our business. We need to think about how to get feedback on the success of each policy, as well as how to continuously work to improve upon each.”

The report goes on to state that the 31 targets fall into four major categories: things that impact American Water’s employee population, its community, its employee satisfaction, and its relationships with suppliers. It also states that if people focused on those four areas and on the implications of diversity in each, the reasons for many of the targets on American Water’s list would perhaps be validated. More importantly, the report has the potential to significantly simplify and put into understandable terms what management is trying to achieve. Additionally associated with this assessment report was a recommended communications plan, which to some extent has been used. However, as of December 2007, American Water has made little progress toward achieving these 31

targets and timely implementing this 27-month diversity plan. The diversity plan had targets starting in January 2006 and continuing through March 2008. American Water management indicated that little progress had been made as a result of competition with other initiatives. Nevertheless, diversity is important and none of these targets should continue to be ignored.

Finding IX-6 PAWC has a fully compliant affirmative action plan, but could be more aggressive in setting affirmative action hiring goals and attracting women and minority job candidates.

Utilization analysis of women and minorities is a somewhat arcane process. Results are affected by what geographic area is used to determine workforce availability and what method is used to calculate underutilization. The utilization analysis compares the actual percentage of minorities and females in each job group (from the job group analysis) with the calculated percentage availability of minorities and females (from the availability analysis). It then uses the results of this comparison to determine whether minorities and females are “underutilized” in any job group. “Underutilization” is defined as “having fewer minorities or women in a particular group than would reasonably be expected by their availability.” There are four accepted methods used to calculate underutilization:

1. *Any difference* – This approach is the simplest and suggests that underutilization exists if there is any difference between the availability of women or minorities, as compared to their percentages in the employer's actual workforce.
2. *Difference greater than or equal to one person* – This suggests that if the difference between utilization level and the weighted availability level is one or more, a job category is considered to be underutilized and would therefore set a recruiting target for this job category.
3. *80% rule* – This approach suggests that if the utilization level is within 80% of the weighted availability then the job category is considered to have an acceptable utilization level; goals are set for job categories where the utilization level falls below 80%.
4. *Two standard deviations rule* – This approach uses a more sophisticated statistical test to determine whether the utilization level falls within an acceptable range. If utilization is more than two standard deviations from the weighted availability figure then a job category is considered to be underutilized. American Water would then set a hiring goal for this job classification.

PAWC reports underutilization using three of these four methods, as it does not report utilization using the *any difference method*.

Exhibit IX-10 shows underutilization using the three methods for all seven job groups in each of the three reporting areas for PAWC.

Exhibit IX-10
PAWC Women and Minority Utilization
as of December 31, 2006

Job Group	Western		Northeast		Central	
	Women	Minorities	Women	Minorities	Women	Minorities
Officials and managers	11 of 73 Diff. ≥ 1 : No 80%: No 2 Std. Dev: No	1 of 73 Diff. ≥ 1 : Yes 80%: Yes 2 Std. Dev: No	5 of 49 Diff. ≥ 1 : Yes 80%: Yes 2 Std. Dev: No	0 of 49 Diff. ≥ 1 : Yes 80%: Yes 2 Std. Dev: No	10 of 58 Diff. ≥ 1 : No 80%: No 2 Std. Dev: No	4 of 58 Diff. ≥ 1 : Yes 80%: Yes 2 Std. Dev: No
Professionals	1 of 3 Diff. ≥ 1 : No 80%: Yes 2 Std. Dev: No	0 of 3 Diff. ≥ 1 : No 80%: Yes 2 Std. Dev: No	4 of 4 Diff. ≥ 1 : No 80%: No 2 Std. Dev: No	0 of 4 Diff. ≥ 1 : No 80%: Yes 2 Std. Dev: No	8 of 19 Diff. ≥ 1 : No 80%: No 2 Std. Dev: No	1 of 19 Diff. ≥ 1 : No 80%: Yes 2 Std. Dev: No
Technicians	3 of 4 Diff. ≥ 1 : No 80%: No 2 Std. Dev: No	0 of 4 Diff. ≥ 1 : No 80%: No 2 Std. Dev: No	12 of 13 Diff. ≥ 1 : No 80%: No 2 Std. Dev: No	3 of 13 Diff. ≥ 1 : No 80%: No 2 Std. Dev: No	1 of 2 Diff. ≥ 1 : No 80%: No 2 Std. Dev: No	0 of 2 Diff. ≥ 1 : No 80%: No 2 Std. Dev: No
Office and clerical	10 of 12 Diff. ≥ 1 : No 80%: No 2 Std. Dev: No	0 of 12 Diff. ≥ 1 : Yes 80%: Yes 2 Std. Dev: No	19 of 24 Diff. ≥ 1 : No 80%: No 2 Std. Dev: No	1 of 24 Diff. ≥ 1 : No 80%: No 2 Std. Dev: No	18 of 23 Diff. ≥ 1 : No 80%: No 2 Std. Dev: No	4 of 23 Diff. ≥ 1 : No 80%: No 2 Std. Dev: No
Craft workers	12 of 93 Diff. ≥ 1 : No 80%: No 2 Std. Dev: No	7 of 93 Diff. ≥ 1 : No 80%: No 2 Std. Dev: No	4 of 81 Diff. ≥ 1 : Yes 80%: Yes 2 Std. Dev: No	0 of 81 Diff. ≥ 1 : Yes 80%: Yes 2 Std. Dev: No	7 of 65 Diff. ≥ 1 : Yes 80%: Yes 2 Std. Dev: Yes	2 of 65 Diff. ≥ 1 : No 80%: No 2 Std. Dev: No
Operatives (semi-skilled)	33 of 236 Diff. ≥ 1 : Yes 80%: No 2 Std. Dev: No	20 of 236 Diff. ≥ 1 : Yes 80%: Yes 2 Std. Dev: No	7 of 111 Diff. ≥ 1 : Yes 80%: Yes 2 Std. Dev: No	5 of 111 Diff. ≥ 1 : No 80%: No 2 Std. Dev: No	13 of 62 Diff. ≥ 1 : No 80%: No 2 Std. Dev: No	3 of 62 Diff. ≥ 1 : No 80%: No 2 Std. Dev: No
Laborers (unskilled)	0 of 1 Diff. ≥ 1 : No 80%: Yes 2 Std. Dev: No	0 of 1 Diff. ≥ 1 : No 80%: Yes 2 Std. Dev: No	0 of 0 Diff. ≥ 1 : No 80%: No 2 Std. Dev: No	0 of 0 Diff. ≥ 1 : No 80%: No 2 Std. Dev: No	0 of 0 Diff. ≥ 1 : No 80%: No 2 Std. Dev: No	0 of 0 Diff. ≥ 1 : No 80%: No 2 Std. Dev: No

Source: Information response 710

While the two standard deviations rule is an accepted method for calculating variance from the expected utilization level, it is also the method that is least likely to produce a determination of underutilization. PAWC uses this method to make a determination of underutilization; however, it does not appear to meet the spirit of the Commission's intent to foster diversity within Pennsylvania's utility industry. At PAWC, affirmative action hiring goals are made only when the utilization level is less than two standard

deviations. In *Exhibit IX-10* there are several job categories where the one person and 80% rules suggest underutilization, but the two standard deviations rule does not. Utilizing the two standard deviations method for determining underutilization, PAWC has only set a hiring goal for female craft workers in the Central Region. *Exhibit IX-10* indicates that had the other methods been used instead, an additional 16 goals would have been set for PA. The diversity action plan speaks only to minority candidate pools for executive level positions. A more aggressive approach to affirmative action would suggest hiring goals in additional categories and a corollary commitment in the diversity action plan.

For example, craft-worker jobs are relatively high paying (family sustaining). This category includes maintenance and crew supervisors, licensed operators, and skilled maintenance workers. It is obvious from the availability data that there is a small pool of qualified minorities for these jobs. A minimal compliance view says that American Water is not underutilized even when, as in Northeast PA, there are no minorities in the 81 craft-worker jobs in the company. A broader commitment to diversity might look at ways to develop minority interest in these jobs, minority job training, hiring goals, and aggressive recruiting.

The affirmative action plan indicates no hiring goals or any strategies that have been employed to develop minority interest in these positions. When Schumaker & Company requested a summary of efforts made to recruit women and minority candidates that were not reported in the affirmative action plan, the company provided 2007 statistics for PAWC ethnicity/gender groups by job categories as shown in the 2006 PaPUC diversity report. This data is essentially the same as contained in the AAP (although may be from a different reporting date). More to the point, there is no indication of strategies employed to attract minority and women candidates.

Finding IX-7 The supplier diversity program is informally conducted.

As stated previously, American Water has an informal policy on supplier diversity, which has been approved by its COO. American Water Supply Chain management indicated that it anticipates it will become a written formalized policy/practice in 2008.

In addition, the supplier diversity targets are based on participation of MWDVBE suppliers in the bidding process, not spend. For example, target measure examples for Supply Chain staff include:

- ◆ Assure that qualified and available minority, women-owned, or small business enterprises are included in all competitive bidding events. Total participation (invited to bid) rate should be documented and range from 50% to 70% of bidding events.
- ◆ Implement the requirement of certifications from all verified WMDVBE suppliers in American Water Company's ERP system and provide data for the regional Diversity Reports by the end of February 2007.
- ◆ Implement use of new Diverse Supplier databases and provide training to Supply Chain by the end of 2007.

- Ensure that new supplier diversity reporting requirements in Pennsylvania, New Jersey, and California are followed.
 - Update supplier diversity program on intranet by the end of 2007.
 - Facilitate at least four supplier diversity program meetings paced throughout the year by year end.
- ◆ Provide three to five *Supply Chain Link* articles throughout the year to explain supplier agreement management processes or Supply Chain efforts in supplier diversity.

Although the Supply Chain Director has the same process target (continuous improvement in all Supply Chain areas) as other Supply Chain staff, she does not always have a specific performance measure related to supplier diversity, as staff does. In 2006, she did, in 2007 she did not, and in 2008, she does. According to American Water management, the Supply Chain Director had many possible targets, so supplier diversity participation was not included.

No Supply Chain management or staff personnel have actual diversity spend as a target.

Finding IX-8 Over the 2003 to 2007 time period, PAWC has neither consistently submitted or fully complied with the filing guideline requirements for diversity reports submitted to the PaPUC.

A Diversity Report, showing both employee and supplier diversity, was not filed with the PaPUC for the years 2003 through 2005. The first PAWC report in recent years was submitted for 2006 (submitted in March 2007). PAWC also submitted a 2007 report in February 2008.

In its 2006 employee diversity report, workforce composition statistics did not include five years of data, as requested by the PaPUC most recent filing guidelines. PAWC included only its 2006 workforce data, not the prior four years'. In its 2007 employee diversity report, it also failed to include historical data.

In its 2006 supplier diversity report, PAWC indicated that only suppliers that produced a certification of minority status (WMDVBEs) were reported. That is because the Supply Chain organization had recently implemented a policy that only spend with certified suppliers would be included in its WMDVBE spend reports. In the past, PAWC spend with WMDVBEs had been based on a self-certification form that was completed by PAWC's responding suppliers. When instituting this new policy, Supply Chain sent letters requesting evidence of each supplier's certification status. In addition, the department contacted approximately 75% of these suppliers via telephone. In its 2007 supplier diversity report, PAWC included self-certifying, as well as certified, WMDVBE organizations.

Also of note is PAWC's comment that "no significant innovative approaches have been undertaken by Pennsylvania-American Water Company or the Supply Chain organization to encourage minority/women/persons with disabilities-owned business development, partnering, subcontracting, joint venturing, and venture capital projects." The report also states that barriers presently preclude the inclusion of MWDVBE participation in many of PAWC's sourcing category efforts because some

PAWC sourcing strategies preclude MWDVBE participation. Such strategies include, but are not limited to, purchased water, water treatment chemicals, telecommunications services, electrical power, and regulatory expenses, which PAWC management represents as a significant portion of PAWC's annual spend.

PAWC also mentions that Supply Chain's systems are unable to accurately identify expenditures by prime contractors with minority subcontractors.

C. Recommendations

Recommendation IX-1 Update the diversity action plan, provide resources, and implement the plan in a timely manner and give consideration to a Pennsylvania-specific initiative. (Refer to Finding IX-1 and Finding IX-5.)

American Water assures us that with the divestiture from RWE behind them, it will be able to refocus on many initiatives that were set aside during the transition. Most notably is a recommitment to the diversity initiative. Given the time that has passed, we believe the plan will need updating, with emphasis placed on the business case for diversity. In addition, resources will need to be allocated to the effort. Most notably, a Diversity Coordinator should be identified. Schumaker & Company strongly believes that this person should be of a sufficiently senior level to establish credibility and have sufficient influence on American Water's policies and practices. This person should be tasked with re-establishing the Diversity Council and implementing all aspects of the plan. The Diversity Coordinator should make regular progress reports to both the PAWC President and American Water as a whole.

Schumaker & Company believes HR should take an active role in the process and that diversity should be a key driver in its workforce planning and recruitment initiative (see *Recommendation IX-5*). We also believe consideration should be given to a Pennsylvania-specific initiative. Given the size of the Pennsylvania organization and the anticipated level of hiring, we think it would be justified to allocate resources to PAWC to implant its diversity effort and to link to the overall corporate initiative.

Recommendation IX-2 Complete efforts to assure data integrity in the JD Edwards human resources information system. (Refer to Finding IX-2.)

While the issue of HRIS data integrity has broad ramifications for American Water, this recommendation is specific to data used to create the affirmative action report. It is imperative that location and other relevant employee data be accurate. This will reduce the need for the manual verification and enhance the integrity of PAWC's affirmative action plan.

American Water appears to have identified key data-integrity issues and continues to work toward resolution. We are concerned with the unstable nature of the JD Edwards' enhancement project and

the potential move to a new ERP platform, although a new HRIS system could ultimately completely address the issue. Nonetheless, we accept American Water's assurance that data-integrity issues are being addressed. We would expect periodic reporting from the HR VP regarding progress on this issue.

Recommendation IX-3 Develop and implement a standard data-verification process for EEO-1 reporting. (Refer to Finding IX-3.)

American Water HR should develop a standard data-verification process for all reporting locations. The PAWC HR manger should ensure that all steps are followed in all locations. When complete, she should review and approve all submissions prior to their submission to AWWSC HR.

Recommendation IX-4 Require the AWWSC Human Resources Vice President to review and approve EEO-1 reports prior to submission. (Refer to Finding IX-4.)

The HR Analyst who compiles the data for the EEO-1 reports should not be the person who certifies the report. The lack of separation in responsibilities does not meet the federal requirement and does not assure proper oversight. While Schumaker & Company is in no way faulting the HR Analyst's efforts, we believe that certification should come from another person at a higher level and that the AWWSC HR Vice President seems most appropriate for this task.

Recommendation IX-5 Define, document, and implement more aggressive hiring plans for women and minorities. (Refer to Finding IX-6.)

The two standard deviation method for determining underutilization is an acceptable EEOC method and assures that PAWC is in compliance. Nonetheless, Schumaker & Company believes Pennsylvania-American Water Company could be more aggressive in developing minority and women interest in the water utility industry in general and in PAWC in particular. In *Chapter II – Executive Management, External Relations, & Human Resources*, we give extensive consideration to the high level of expected retirements PAWC will face, and we have worked with PAWC in *Phase III* to develop a plan to address this issue. The high level of expected turnover creates a significant opportunity to attract a more diverse workforce to the organization.

The recruiting plan developed as a result of the workforce planning initiative, which was begun in *Phase III*, should specifically address women and minority hiring. It should include outreach to specific communities and strategies for developing women and minority interest in a water utility career. The company might also look outside the local job market (from which the availability data is drawn).

The plan should also set specific goals to assure accountability. These may include applicant pool goals or hiring goals for women and minorities beyond those necessitated by underutilization calculations in the affirmative action plan. This recruitment plan may or may not be incorporated into American

Water's affirmative action plan, but it must be documented and success should be measured and reported to PAWC executive management.

Recommendation IX-6 Formalize the supplier diversity program and explore the use of spend targets in the Supply Chain performance objectives. (Refer to Finding IX-7.)

American Water should create a formal supplier diversity policy/practice as Supply Chain management has stated it intended to complete in 2008. Furthermore, Schumaker & Company understands American Water's philosophy that management does not want to give contracts to diverse suppliers that are not competitive, and we agree. However, the lack of spend targets does not hold Supply Chain accountable for increasing actual spend dollars with diverse suppliers. American Water management should explore the inclusion of such targets, along with participation objectives, as part of the group's (and the Director's) objectives. Safeguards can be put in place to prevent Supply Chain from awarding bids to non-competitive diverse suppliers.

Recommendation IX-7 Submit comprehensive diversity reports to the PaPUC annually. (Refer to Finding IX-8.)

Each year, PAWC should submit comprehensive diversity reports that incorporate five years of historical data in compliance with the most recent PaPUC reporting guidelines. If five years of historical data is not available, then PAWC should build an historical picture as it goes. For example, the 2008 report (submitted in early 2009) should at least include three years of data, the 2009 report should at least include four years of data, and the 2010 (and later) reports should include five years of data.

X. Customer Service

Pennsylvania-American Water Company (PAWC) provides an essential service to its customers – and must provide this service in a prompt, accurate, and responsive manner. Planning, organization, procedures, and philosophy are all essential components in delivering appropriate and effective customer service. Effective customer service operations act as a bridge, serving the needs of both the utility’s external ratepayers and internal departments. This chapter addresses the activities that will be examined with respect to customer service operations.

- ◆ Customer service, complaints, and inquiries (call center)
- ◆ Customer accounting and billing
- ◆ Credit and collections
- ◆ Meter management
- ◆ Theft of service management

A. Background & Perspective

Among the items that we investigated in this area included the following:

- ◆ The reasonableness of American Water’s system-wide call center (which PAWC utilizes) staffing levels and overall performance (e.g., call abandonment rate, percentage of call answered within 30 seconds, etc.) to include validation of telephone access statistics, and a determination of the adequacy in response and rate of timely resolution of customer concerns/complaints
 - Are the customer service center(s) appropriately configured and adequately staffed for the level of telephone inquiries and customer visits?
 - Do PAWC customers who contact the call center with a question, complaint, or request receive a prompt, courteous, consistent, timely, and accurate response?
- ◆ PAWC’s customer complaint procedures, including a review of their compliance with the Pennsylvania Public Utility Commission (PaPUC) dispute handling procedures
 - Is information from customer complaints collected and used to identify the underlying root causes of customer questions and problems?
 - Are customer service standards utilizing both quantitative and qualitative measures?
 - Is there a visible and formal appeal process through a review officer within PAWC for responding to customers who remain dissatisfied after a front line contact?
- ◆ The trend of PAWC’s consumer complaint rates, justified complaint rates, and complaint response times

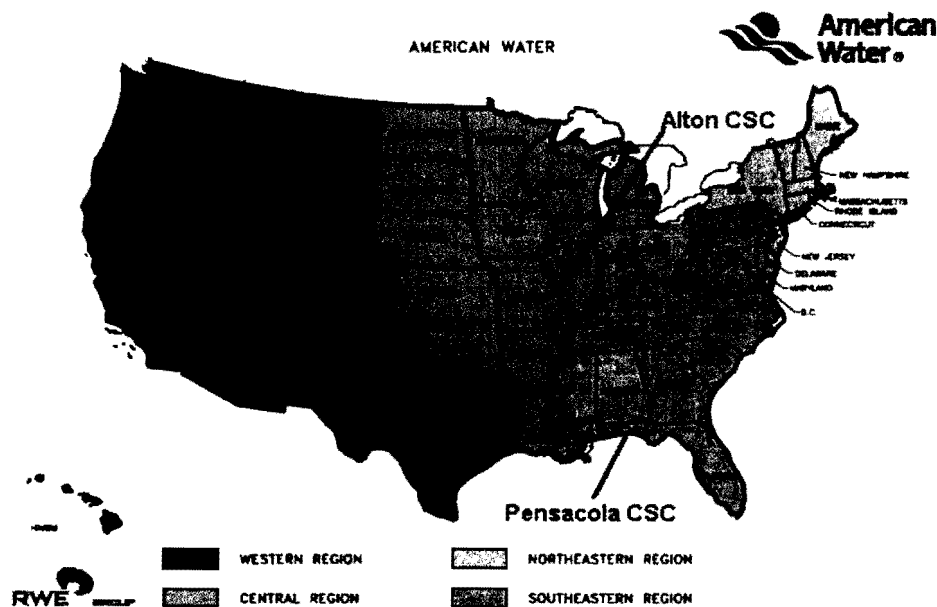
When evaluating PAWC's customer service, billing, and collection policies and procedures, we considered all applicable PaPUC regulations in Title 52 of the *Pennsylvania Code*, including the changes that have occurred as a result of the recently enacted state law known as Act 201 of 2004, codified as Chapter 14 of Title 66 of the Pennsylvania Consolidated Statutes (or Public Utility Code).

The responsibility for the various customer service functions for Pennsylvania are held by the Customer Relations/Field Resource Coordination Center (FRCC) Southeast Region organization of the Eastern Division of American Water Works Service Company (AWWSC) and in the national call center located in Alton, Illinois and Pensacola, Florida.

Call Center Operations

The Customer Service Center (CSC) for the American Water Works Company, Inc. (American Water) organization provides many of the activities involving customer service, particularly call center operations and centralized billing, credit, and collections activities. Although the CSC is physically located in two different locations, it operates as one organization, as illustrated in *Exhibit X-1*. The Alton (Illinois) Call Center was opened in April 2001 and the Pensacola (Florida) Call Center was opened in 2004.

Exhibit X-1
American Water National Call Center
as of December 31, 2007



Source: Information Response 256

Due to some of the special regulatory requirements of the PaPUC, over 90% of the Pennsylvania calls are handled by customer service representatives (CSR) located at the Pensacola Call Center location. After-hours calls are routed to Alton, as it is the only call center open on a 24 hour by 7 day (24x7) basis. The Pensacola representatives are trained to the specific requirements of the Customer Assistance Program (CAP) and other specific regulatory requirements in Pennsylvania.

There are 177 different full-time and 24 part-time shifts in the call centers. Each shift is a schedule for reporting to work. Employees rebid for these shifts every 90 days, thus employees have the ability to change their work schedule every 90 days based on seniority. More than five years of call history is currently available from which to forecast expected call volumes. A software tool, Blue Pumpkin, is currently used to forecast volumes and monitor adherence to schedules. In addition, call center management has the ability to monitor both the audio and screen navigation of individual CSRs to provide ongoing coaching. All CSRs are monitored, as a minimum, on a monthly basis.

Calls are routed to the first available representative using a skills based routing scheme. There are currently six different skills for Pennsylvania calls, as follows:

- ◆ *35 - PA Other*: Originally set up as general calls but currently used to track the number of customers who respond to the “update your information request”
- ◆ *36 - PA Billing*: Originally set up as billing skill, but no longer used; monitored by Ordering & Provisioning (O&P) daily
- ◆ *39 - PA Collections*: Currently used for the toll-free numbers associated with PAWC collection notices
- ◆ *55 - PA Billing NEW*: Currently used for reporting callers who choose the billing option in the IVR
- ◆ *56 - PA Other NEW*: Currently used for general customer questions (not billing-related)
- ◆ *60 - PA Emergency*: Set up as a result of the separation of PAWC business and currently used as a method of directing PAWC emergency calls to the CSRs who received specialty training made necessary by PA PUC regulations

A picture of the inside of the Alton Call Center is shown in *Exhibit X-2*.

Exhibit X-2
Inside Alton Call Center
as of December 31, 2007



Source: Interview 97 (Tour of Facilities)

A picture of the inside of the Pensacola Call Center is shown in *Exhibit X-3*.

Exhibit X-3
Inside Pensacola Call Center
as of December 31, 2007



Source: Information Response 256

- ◆ *Call Handling* – inbound customer calls and correspondence (mail, fax, e-mail) regarding billing, collections, and services, and responses to customer needs, creation of service orders as required
- ◆ *Billing* – customer bills, process adjustments, resolve billing issues, special accounts billing, and managed accounts
- ◆ *Collections* – collection of unpaid bills, issuance of notices, outbound calling, issuance of shutoff orders, resolution of collection disputes, and bankruptcy processing
- ◆ *Time Critical* – timely processing of high priority service needs (i.e., emergencies) and dispatch of field services 24-hour/365-day coverage, handoff from FRCCs

- ◆ *Education & Development* – new hire training, refresher training, new position training, local district training, and testing
- ◆ *Quality* – quality monitoring of call handling, provision of reports to CSC leadership for coaching and ongoing development, and service order accuracy review and reporting
- ◆ *Support Functions* – finance, work force management, human resources, information technology, and administration functions, including cost control, recruitment, human resource, staffing, scheduling, overtime needs, administrative functions, and system/desktop support
- ◆ *Business Liaisons* – interface with each of the regions on all matters concerning call center operations

The CSC has identified specific goals and objectives for the organization, which apply to all states, including.

- ◆ Call handling
 - 90% efficiency on quality assessments
 - 85% on service order quality reviews
 - Attendance (based on points assessed for unexcused absences)
 - 90% adherence to schedule
- ◆ Billing
 - Total bill corrections to water service not greater than 2.5% of active accounts
 - Achieve 10% reduction in utility contacts over same period of prior year
- ◆ Collections
 - Issue greater than 95% of eligible collections notices
 - Issue greater than 95% of eligible collections shutoff orders
- ◆ Time criticality
 - Dispatch greater than 85% of emergency orders within 30 minutes of creation (24 x 365 basis)
- ◆ Operations
 - Answer greater than 80% of calls within 30 seconds
 - Handle greater than 95% of calls offered
 - Greater than 78% for first call resolution
 - Greater than 90% of correspondence handled within three business days

Call Center Technology

Call Routing and Management

The CSC operates redundant Avaya S8700 Media Servers running Avaya Call Manager v2.2.2 to route and deliver calls to agents, which at American Water are generally referred to as CSRs. In addition, the system uses Avaya CTI for screen-pop delivery to CSRs, Avaya IR v1.1 with speech recognition for self-service functionality, Intuity Audix for voice mail and fax capabilities, and redundant Avaya Call Management System (CMS) servers for real-time and historical call statistics and reporting.

Supervisor coaching of agents relies on Nice Call Recording v8.x with 60 channels for quality assurance and agent recording, MicroCall Call Accounting Server, and Avaya Operations Analyst for reporting.

Operational continuity is assured by redundant Cisco routing and switching for personal computers and the voice network. Backups are performed off site using IBM's Tivoli Storage Resource Manager. The CSC uses PowerWare UPS Systems for battery backup. In addition, it maintains a 24 x 7 Avaya Maintenance Agreement for on-site or remote technical support.

The primary local exchange carrier and toll free provider is ATT, which furnishes a SONET ring and DS3 voice connectivity (DS3 = 28 T1 lines in which each T1 has 23 to 24 lines each depending on configuration or trunking). A SONET ring is a redundant network connection that has one termination at ATT's Florissant MO operations center and the other termination at a Collinsville, IL location. In the event one connection experiences issues or is severed, calls immediately begin to route across the redundant connection. In addition, this connection has dual-entry points into the building with one entering from the front and one entering from the rear to prevent downtime due to a line being severed.

The Pennsylvania group has 3 X T1s (70 dedicated circuits) plus access to 4 X T1s (94 shared circuits) for a maximum of 164 concurrent inbound callers.

Workforce Management

The CSC uses Blue Pumpkin v4.6 SP2 Workforce Management Suite for agent adherence and scheduling. Blue Pumpkin is a workforce management tool that allows the user to schedule staff, measure performance, and analyze trends and opportunities, while learning and making suggestions to adjust call center staffing. A telephone call center is a collection of agents, telecommunication equipment, and management software, organized for the sole purpose of handling customer contact through telephone calls. As calls are received, they are identified by an automatic call distributor (ACD) according to type (e.g., sales calls, service calls) and are either delivered to a waiting agent or are queued pending agent availability.

The CSC is currently working to replace Blue Pumpkin with Impact 360 and is in the very beginning stages of this update. The Impact 360 vendor recently completed a validation study that included some clean-up suggestions to be sure that the CSC could migrate to the latest version of Impact 360's

Workforce tool. The CSC is now researching pricing and internal financing options to develop a business case for approval.

The CSC expects significant improvements from the switch to Impact 360, including the following enhancements to improve service levels:

- ◆ *Queue Hopping and Flexible Duration Shift Activities*: witness forecasting and scheduling supports the creation of queue-hopping activities, where agents work (and are scheduled to work) on different queues at different times during the shift.
- ◆ *Five Minute Shift Activities*: schedule shift activities that have a granularity of five minutes at any interval (e.g. 5,10,15,20,25,30,35 minutes).

Enhancements that help increase agent satisfaction include:

- ◆ *Time-Off Report and Agent View*: a new Time off Calendar View option displays total time-off hours allocated, total scheduled time-off taken and pending, and total time-off remaining. There are two views: a Personal View for agents and an Organization View for managers.
- ◆ *Partial Shift Swaps*: allow agents to post a portion of a shift, as opposed to their entire shift, to be swapped with another agent. Another agent can pick up a portion of a posted shift or multiple agents can each accept a portion of a posted shift.
- ◆ *Shift Bid Sorting And Filtering*: makes it easier for agents to find their ideal shift for which to bid.

Enhancements that help improve visibility into call center performance include:

- ◆ *New Reporting Engine with Ad-Hoc Querying*: same (Congas) reporting engine as rest of Workforce solution with new ad-hoc querying capabilities for more sophisticated and custom analysis of contact center performance.
- ◆ *Employee Effective Dates*: changes to key attributes of the employee information are associated with a date or date range on which the change became effective, which helps more accurately track changes to the business and employees.

Enhancements that help with long term planning include:

- ◆ *Weekly Scenarios and Simulation*: a strategic planning solution has been enhanced to facilitate long-term planning in weekly scenarios in addition to monthly scenarios.

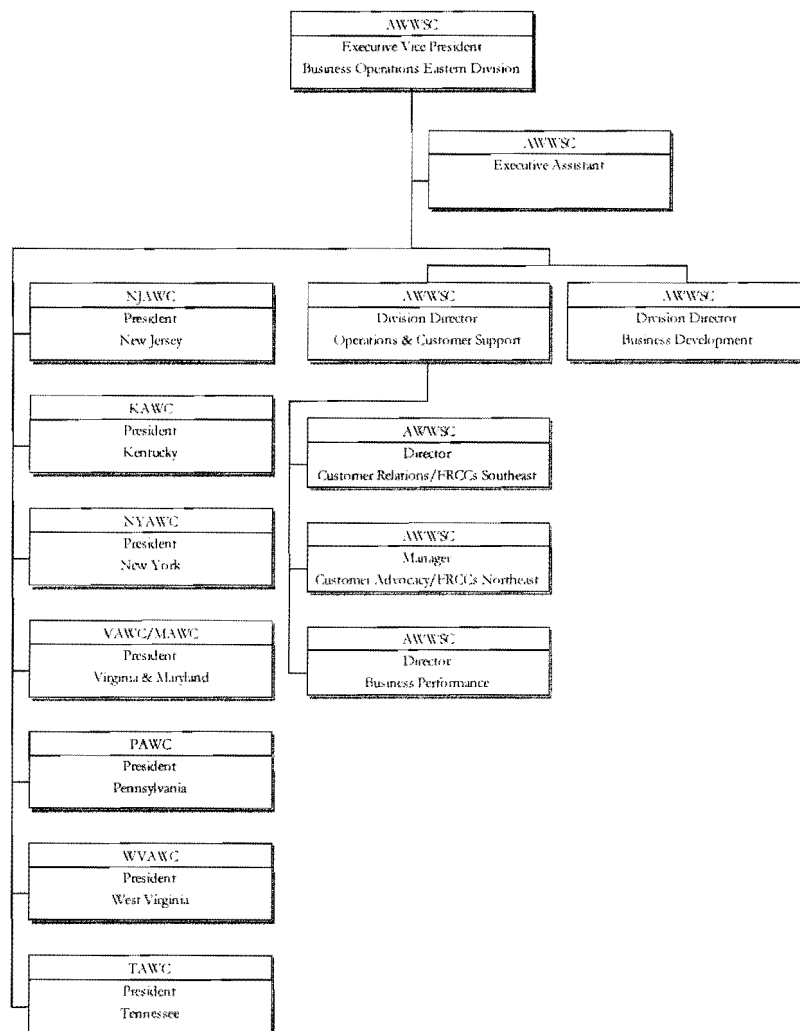
The CSC also recognizes that PAWC is continuing to use multiple 800 numbers in Pennsylvania and that these should be consolidated to a single 800 number routed to the Pennsylvania group in Pensacola. A single 800 number is expected to improve call management and allow better tracking of Pennsylvania specific calls. This project has not begun and the company reports it does not yet have a project plan.

Customer Relations

Organization & Staffing

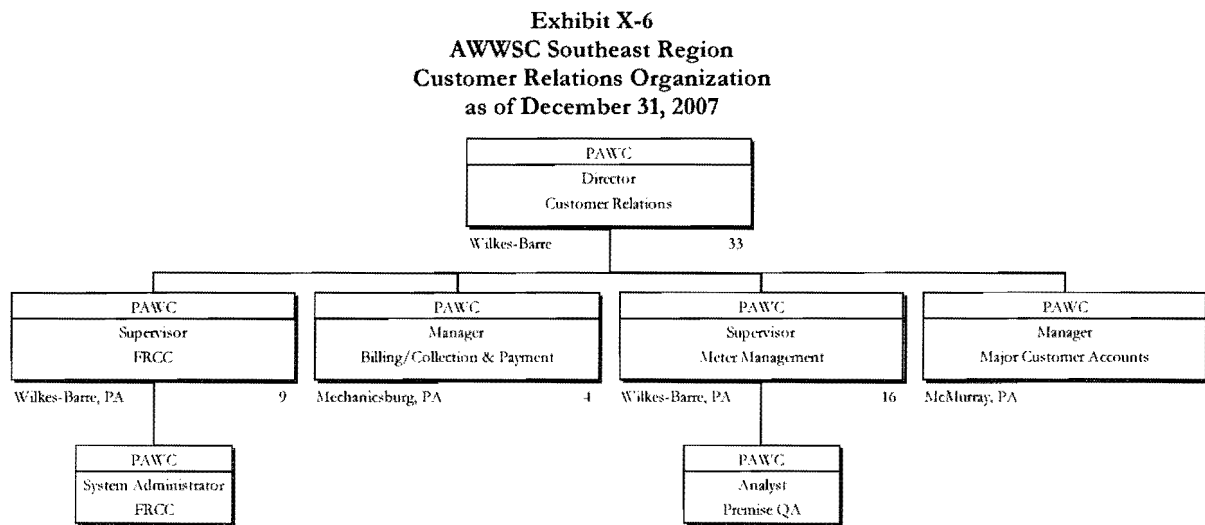
The responsibility for other various customer service functions are contained within the Customer Relations/FRCC Southeast organization of the Eastern Division, as highlighted in *Exhibit X-5*. Customer Relations/FRCC is responsible for all customer relations activities across the region, which includes Pennsylvania.

Exhibit X-5
AWWSC Eastern Division Organization
as of December 31, 2007



Source: Information Responses 257 and 890

The Southeast Region Customer Relations organization is shown in *Exhibit X-6*. This organization is primarily responsible for the regional management and dispatching of field technicians, the overall management and monitoring of meter upload, download, and Electronic Customer Information System (ECIS) edit reports, compliant handling, and serving as the local interface with the national call center on customer and state/local issues.



Source: Information Response 1 page 12 and Company Comments

As shown in *Exhibit X-6*, the Customer Relations organization is composed of four separate areas:

- ◆ *Field Resource Coordination Center* – This group, which operates from 7:00 am to 7:00 pm Monday through Friday, is responsible for the day-to-day dispatch of field technicians. The FRCC is responsible for overseeing the dispatch of approximately 100 field technicians in Pennsylvania on any given day. These field technicians are primarily involved in meter change outs, new service, turn on/turn offs, and acting as first responders on water leak reports. Approximately 90% of the scheduled workload is automatically assigned to field technicians on a nightly basis with the dispatch coordinators primarily managing and monitoring the orders during the day. Time critical orders, such as reported water leaks, are handled by the CSC Time Critical group in conjunction with the appropriate FRCC for a region. Orders are usually dispatched using the Advantex dispatching software during the same day. Activities within the FRCC include:
 - Dispatching service work, ensuring that appointments are met and emergency orders are responded to in a timely manner
 - Acting as a liaison primarily between Field Service operations and the CSC Time Critical group
 - Supporting the customer service activities of network supervisors, field technicians, and the CSC Time Critical group

- Coaching field service representatives in work-quality issues to help drive performance
- Working with field service representatives and supervisors to enhance scheduling, reduce travel time and improve overall system functionality
- ◆ *Billing/ Collection and Payment* – This group is currently responsible for the handling of all complaints, including all informal and mediation complaints. Complaints to the PaPUC generally fall into two categories. Informal complaints are primarily billing and/or service related issues, while mediation complaints are primarily related to collection action for delinquent payments. The responsibilities for billing/collections have been transferred to the CSC, although the name of the group has not changed. Activities include:
 - Acting as the liaison between PAWC and the PaPUC Bureau of Consumer Services
 - Performing investigations on both informal and mediation complaints
 - Monitoring call center and PAWC districts for collections and compliance issues; providing training as required
 - Performing account investigation in conjunction with PaPUC heating shut-off regulation (hot water heating customers)
 - Partnering with Be-Utility Wise and the Pennsylvania Energy Utilities and Aging Consortium to provide education to communities through social services to PAWC's aging community
- ◆ *Meter Management* – The group is composed of four individuals who manage the processing of the meter reading exception reports. The actual meter reading is a field force responsibility (reports to different group) with this group responsible for the final quality assurance on the meter reading results prior to the information being submitted into the billing system. A typical review includes high consumption, closed with usage (closed accounts that are soft closed – i.e., a service technician is not necessarily dispatched to perform a hard shut off, but the meter is just monitored), and meters identified with bad dials. In many cases, these items might result in the creation of a service order to a field service technician. PAWC customers are currently billed every month, although not all meters are read every month. Some are read every other month and estimated on the off month.
- ◆ *Quality Assurance Analysts* – This group is composed of two individuals who perform weekly validation audits to confirm that premises are set up in accordance with established methods and procedures. Mismatch and metric reports are reviewed in addition to critical error conditions. Follow-up on exceptions are recorded in a monthly scorecard, and documented in a Communication Log that measures and monitors certain business processes within the organization.
- ◆ *Service Support Representatives* – This group is composed of ten individuals who perform the “Back Office” functions in regard to follow up requests to both completed and in-completed service order conditions coded by field technicians. Activities within the Service Support group include:

- Ensuring that follow-up activities related to field service orders are reviewed in a timely manner and that additional follow up work is completed (i.e.: service order error conditions, office review, meter remove, and additional work required)
- Closing paper-based service orders
- Reviewing accounts for non-revenue water (NRW) related activity and creating service orders as applicable for estimates and stopped meters
- Review and coding accounts related to collection activity for water and sewer terminations
- Uploading and posting routes for billing
- ◆ *Major Accounts* – This is a one-person group that is primarily responsible for coordination with municipalities and large customers on the selling of usage data for those customers’ billing systems. Activities include:
 - Negotiating contracts relating to wastewater billing and revenue collection, usage data, and shut offs
 - Working closely with large commercial, industrial, and municipal entities in an effort to develop and maintain good relationships
 - Developing trends and analyses regarding month-to-month usage on individual meters of a specific size to detect stuck or problem meters more quickly

Service First Program

In 2004, PAWC undertook a Service First program, which was tied to the implementation of the existing service order software (Advantex). As part of this implementation, service orders were generated in the call center and routed to individual field technicians through Advantex and transmitted via the Verizon cellular network to Panasonic Toughbooks located in the field technician’s vehicle. Every service order has an average job-duration time, which is used to schedule and assign service orders to field technicians. At the start of the Service First project, the job-duration time was estimated based on a field service survey. After implementation, actual reports were developed to capture the true job-duration times and individual job durations have been adjusted throughout the years to enhance scheduling efficiency.

PAWC offers three-hour appointment windows to customers, in addition to a 30-minute call-ahead option, as shown in *Exhibit X-7*.

Exhibit X-7
PAWC Appointment Windows
as of December 31, 2007

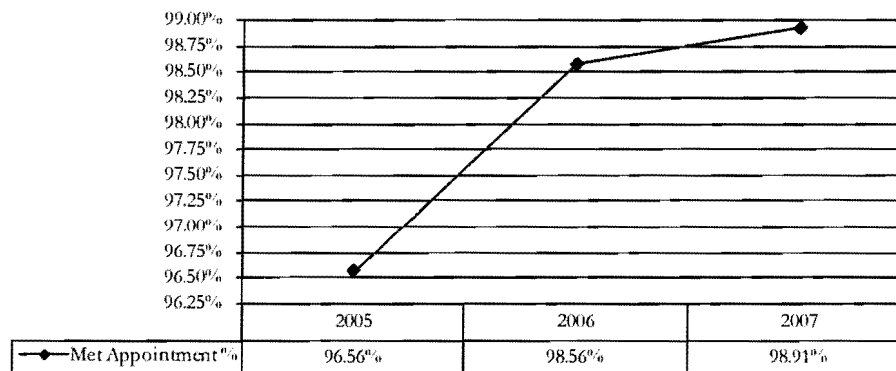
Appointment Window	Start Time	End Time
8 a.m. to 11a.m.	8:00 a.m.	11:00 a.m.
9 a.m. to noon	9:00 a.m.	12:00 p.m.
12:30 p.m. to 3:30 p.m.	12:30 p.m.	3:30 p.m.
1:30 p.m. to 4:30 p.m.	1:30 p.m.	4:30 p.m.
3:30 p.m. to 6:30 p.m.	3:30 p.m.	6:30 p.m.
All day appointment	8:00 a.m.	9:00 p.m.

Source: Information Response 268

The FRCC monitors customer appointments. If an appointment is in danger of being missed, the FRCC will communicate with the assigned technician. If it is determined that the appointment cannot be kept, the FRCC will either reassign the work to an available technician or the FRCC or technician contacts the customer to inform them of the delay. If necessary the FRCC will extend the appointment window to the newly agreed upon time or reschedule the service order for a new day.

PAWC performance in meeting appointments is shown in *Exhibit X-8*.

Exhibit X-8
PAWC Met Appointments
2005 to 2007



Data available starting January 2005
Source: Information Response 268

Customer Surveys

American Water uses Opinion Research Corporation (ORC) to conduct annual customer satisfaction surveys and quarterly service-quality assessments, which include separate results for PAWC customers. The customer satisfaction survey is conducted in the fourth quarter, and seeks to measure customer satisfaction with the American Water brand. The service quality assessments are summarized quarterly, based on monthly interviews with randomly-selected customers who had recent contact with the Customer Service Center. These transactional-based surveys seek to measure customer satisfaction with that specific contact experience. The steps PAWC has taken in response to the survey are as follows:

- ◆ PAWC created standard alert templates (messages regarding planned and unplanned outages) to ensure the use of customer focused language, thus making it easier for customers to understand when using the interactive voice response (IVR) system. PAWC also created refresher training material to remind users how to properly enter alerts with an emphasis on timely system updates.
- ◆ PAWC created and issued laminate cards to field personnel. On these cards were stated PAWC's pledge to customers and simple steps for field personnel to use when interacting face-to-face with customers.
- ◆ The FRCC works on optimizing scheduling capabilities (as part of the appointment-setting process) in an effort to accommodate the number of service-order requests for a given day.
- ◆ PAWC communicates survey results to all users in "Splash," the American Water newsletter and internally generated posters, in an effort to increase awareness regarding customer opinion regarding the company.
- ◆ Special attention and direct follow up are provided to customers who express severe dissatisfaction with PAWC. These customers are flagged in an alert database where the national call center or PAWC company personnel can contact the customer to resolve any complaint.

Customer Accounting and Billing

The CSC provides customer service and customer accounting services for PAWC and its customers. These documented policies and procedures are contained in the CSC Customer Service Manual, as well as via on-line resources (credit and collections/service orders). The CSC is responsible for customer billing. The Billing group is responsible for getting the "billing file" ready for transmission to the Hershey Data Center (for posting to the customer account) and to the outside third party that actually prints and mails customer bills. The Billing group is divided into various billing teams, which are assigned to various geographic areas and are responsible for preparing the "billing file" for a given geographic area. The goal is to have the "billing file" transmitted to the Hershey Data Center and the outside third-party by the third day after the initial meter reading, so that that the bill can be mailed by the fourth to sixth day.

Systems

American Water uses the Electronic Customer Information System from Alliance Data Systems as its customer service database. This package tracks customer, account, premise, and service information. It also performs cash, billing, and collections functions. The ECIS interacts with several other applications, including Advantex. Functions and associated applications include:

- ◆ *Field Service Work* – provides real-time field-service support through a collection of Service First applications and interfaces, which allow field-service workers to receive new work assignments on their mobile computers and manage the scheduling of appointments. Some of the work performed includes meter change outs, turn-ons and turn-offs of service, and emergency repairs.
- ◆ *Meter Reading* – uses multiple meter reading applications for readings captured either manually or automatically. American Water has both fixed-based and drive/walk-by radio frequency meters installed, as well as touch-pad and ARB (pin) devices.
- ◆ *Online Account Manager* – an American Water created utility allows access to an operations and management (O&M) contract customer to view a standard set of reports containing information about the customers that belong to its municipality. Access is controlled through a secure web site.
- ◆ *Usage Data* – exports consumption data collected through the meter reading process to sewer authorities, who in turn use this data to bill their customers.
- ◆ *Letter Generation System (LGS)* – This is an American Water created utility that is used to generate letters to customers. Letters can be auto generated using defined processes or manually requested by a customer service representative.
- ◆ *IVR* – automated telephone menu system that aids in the routing of customer calls to the appropriate call center personnel. Customers can receive account and outage information, and request some types of service work without speaking to a representative.
- ◆ *J. D. Edwards* – ECIS transfers summarized sales and cash information to the American Water's financial information system.
- ◆ *Cash Processing* – cash payment information is received into ECIS from multiple vendors using a standard interface protocol developed by American Water. The vendors include banks and other third-party payment locations.
- ◆ *Third-Party Collections* – post charge-off collection information is transmitted to collection agencies over secure connections. The information is limited to a customer's past-due amount and contact information. The initial collection effort is performed by the American Water Collections group located at the Alton Call Center.
- ◆ *Bill & Letter Printing* – the printing and mailing of bills and letters has been outsourced to a third-party agency. Data is transferred over a secure connection to the agency. The actual billing function is performed by American Water at the Alton Call Center. Billing is a core ECIS function.

Billing Cycle

The duration of each element of the billing cycle is driven by the billing process, as described below.

◆ *Day 1*

- Creation of meter batches by local operations; data is downloaded to handheld meter reading devices.
- Meter routes are read by local operations.
- Local operations exports read routes from Equinox to ECIS.
- Service Support uploads completed routes, print edit exceptions, and post meter batches.
- Meter reading information is transmitted to the Billing group.
- The Meter Reading Edit report is worked by the Meter Management group.
- The Meter Reading Edit orders are issued to obtain missed readings or readings that need to be verified.

◆ *Day 2*

- Local operations continue to review the Equinox meter reading edit file to identify accounts coded by meter readers for skip or trouble codes. Follow up service orders may be created when necessary to obtain an actual reading.
- Any remaining meter readings from the previous day are completed, which would include partially-read routes or skipped reads; readings obtained on this day are manually updated in ECIS by local operations.

◆ *Day 3*

- Meter read routes are pulled for billing.
- Accounts containing terminal billing exceptions are reviewed by the Billing group. Accounts that contain pending meter edit service orders are transferred to an exception batch allowing time for the order to be worked. If an account requires further follow up, the billing group issues a bill read service order that requests verification of the current reading, and the account is transferred to an exception batch.
- Accounts in which no terminal exception was flagged or those that have been resolved are sent to the Hershey Data Center for processing.
- At the end of Day 3 the non billing exception bills are transmitted for processing and issued, which occurs the early morning of Day 4 or three days after the meter was read. This would usually be 99.1% to 99.8% of the accounts that were read on Day 1.
- Meter Edit service orders continue to be worked until 12:00 pm central standard time (CST).

◆ *Days 4*

- Non billing exception bills (99.1% to 99.8% of the billing for that cycle) are issued by the third-party billing service agent.
- Pending bill read/meter edit service orders are worked and closed.
- The Billing group monitors those accounts that are contained in an exception batch and require further follow up. Upon completion of the pending bill read/meter edit service orders, accounts are processed for billing using the service order reading obtained.
- On Day 4 some of the remaining accounts that were previously billing exceptions and could not be billed at that time have been cleared. (In this example this would be less than 1% of the remaining bills), and are transmitted for billing. This would occur the early morning of Day 5 or four days after the meter was read.

◆ *Day 5*

- Remaining non billing exception bills (less than approximately 0.5% of the billing for that cycle) are issued by the third-party billing service agent.
- Pending bill read/meter edit service orders are worked and closed.
- The Billing group monitors those accounts that are contained in an exception batch and require further follow up. Upon completion of the pending bill read/meter edit service orders, accounts are processed for billing using the service order reading obtained.
- On Day 5 the remaining accounts that were previously billing exceptions and could not be billed at that time have been cleared (in this example this would be less than 0.5% of the remaining bills), and are transmitted for billing. This would occur the early morning of Day 6 or five days after the meter was read.

◆ *Day 6*

- Pending bill read/meter edit service orders are worked and closed.
- The Billing Team monitors those accounts that are contained in an exception batch and required further follow up. Upon completion of the pending bill read/meter edit service orders and the resolution of billing exceptions the remaining accounts are processed for billing.
- Remaining non billing exception bills (less than approximately 0.5% of the billing for that cycle) are issued by the third-party billing service agent.

Therefore, most billings are printed and sent out three days (Day 4 of the account billing process) after meter reading; however, those accounts requiring a reread or some other review are usually issued on the fifth or sixth day. Billing errors are corrected by either adjusting the bill or canceling and reissuing the bill. In short by the end of Day 6, all accounts would have been billed in three batches as follows:

- ◆ Day 4 – 99% for the accounts read on day one
- ◆ Day 5 – something less than 1%
- ◆ Day 6 – something less than 0.5%

Prior to November 2005, bill printing processes, along with associated costs, were analyzed and the decision was made to outsource these activities to a company that specialized in printing and mailing services. The major impetus for this transition in November 2005 was improvement of disaster recovery capabilities along with improved growth capability. PAWC's cost per bill over the last three years has been as follows:

- ◆ 2004: \$ 0.36061/bill based on 7.2 million bills processed
- ◆ 2005: \$ 0.36731/bill based on 7.6 million bills processed
- ◆ 2006: \$ 0.37020/bill based on 7.7 million bills processed

Customers can remit payments by the following five methods:

1. The customer can send his or her payment in the mail to a lockbox. For the period from January 1, 2006 to June 30, 2007, the Mellon Lockbox processed 518,539 transactions per month for PAWC (402,262 checks and 116,277 electronic – i.e. credit card) at an average cost of \$.105 each. The cost to the customer of this method is a \$0.41 stamp.
2. The customer can pay at a payment location. There are 119 payment locations throughout PA that accept 20,000 to 27,000 payments per month. There is no cost to the customer in Pennsylvania for using this method. Checkfree receives \$0.38 per item and the payment agent receives anywhere from \$0.20 to \$0.50, depending on transaction. The final cost to American Water is \$0.58 to \$0.88 per transaction and volumes are around 20,000 to 27,000 per month. There is also a \$4.00 non-sufficient funds (NSF) fee from Checkfree.
3. The customer can have funds automatically withdrawn from their account via electronic funds transfer (EFT). This method of remittance is free to the customer. There is no cost to American Water for this method of remittance.
4. The customer can pay over the telephone. If the customer provides the American Bankers Association (ABA) and routing number to pay by check, the cost to the customer is \$1.50. If the customer pays by credit card, the cost is \$1.50 per \$75.00 or 2% of the total. There is no cost to American Water for this method of remittance.
5. The customer can pay on line. If the remittance is made through the PAWC website, the cost is the same as paying by telephone. If the customer pays on line through his or her own bank, the charge is determined by the bank. There is no cost to American Water for this method of remittance.

Credit card payments via telephone and on line payments average 25,000 per month.

Credit and Collections

PAWC has established business processes that are followed to conform to Pennsylvania Chapter 56 and Chapter 14 requirements. These business processes dictate the actions of CSRs in dealing with customers and also result in the generation of the various notices as shown in *Exhibit X-9*.

Exhibit X-9
Collection and Termination Practices
as of December 31, 2007

Letter Name	Description of Letter Contents	Scenario or Type of Customer Used for (Notice Processing Group)
10DAYPCP	Pocono/Ctsvll Wtr/Sewer-10 Day, Chapter 56 Customers	Residential, Chapter 56 Guideline Customers, Bill Class 1
3DAYPCP	Pocono/Ctsvll Wtr/Sewer-3 Day, Chapter 56 Customers	Residential, Chapter 56 Guideline Customers, Bill Class 1
48HRPCP	Pocono/Ctsvll Wtr/Sewer-48 Hr, Chapter 56 Customers	Residential, Chapter 56 Guideline Customers, Bill Class 1
POSTPCP	Pocono/Ctsvll Wtr/Sewer-Post'm, Chapter 56 Customers	Residential, Chapter 56 Guideline Customers, Bill Class 1
10DAYRES	PAPUC - 10Day Term Notice, Active Budgets with PAPUC	Residential Customer granted a PAPUC Budget Bill
3DAYRES	PAPUC - 3Day Term Notice, Active Budgets with PAPUC	Residential Customer granted a PAPUC Budget Bill
48HRRES	PAPUC - 48Hr Term Notice, Active Budgets with PAPUC (Winter Moratorium ONLY)	Residential Customer granted a PAPUC Budget Bill
POSTRES	PAPUC - Post Term Notice, Active Budgets with PAPUC	Residential Customer granted a PAPUC Budget Bill
10DAYRES	Res - 10Day Term Notice, Residential Customers	Residential, Chapter 14 Guideline Customer, Bill Class 1
3DAYRES	Res - 3Day Term Notice, Residential Customers	Residential, Chapter 14 Guideline Customer, Bill Class 1
48HRRES	Res - 48Hr Term Notice, Residential Customers(Winter Moratorium ONLY)	Residential, Chapter 14 Guideline Customer, Bill Class 1
POSTRES	Res - Post Term, Notice, Residential Customers	Residential, Chapter 14 Guideline Customer, Bill Class 1
37DAYT/L	T/L - 37 Day Term Notice, Landlord Notification	Properties with a coded Landlord/Tenant status such as ACT54 Customers
30DAYT/L	T/L - 30 Day Term Notice, Tenant Notification	Properties with a coded Landlord/Tenant status such as ACT54 Customers
10DAYT/L	T/L - 10Day Term, Notice, Tenant Notification	Properties with a coded Landlord/Tenant status such as ACT54 Customers
POSTT/L	T/L - Post Term, Posted at Tenant Property Location	Properties with a coded Landlord/Tenant status such as ACT54 Customers

Source: Information Response 230

PAWC has documented business processes for issuing residential customer medical condition certificates in accordance with Chapter 56 requirements. Statistics regarding the certificates issued over the last five years are shown in *Exhibit X-10*.

Exhibit X-10
PAWC Account Hold for Medical Condition
2003 to 2008

Year	Count
2003	162
2004	293
2005	1,157
2006	674
2007	1,072
2008	499
Total	3,857

Source: Information Response 876

PAWC offers the following help-to-others programs, which assist PAWC's low-income customers:

- ◆ *Grant Program* (Dollar Energy Hardship Fund) – Customers who are 200% or below the federal poverty guidelines may qualify for this program by making application to Dollar Energy or one of the Dollar Energy agencies listed within a community. The maximum grant amount is up to \$500 (annually) based on the customer's balance.
- ◆ *Low Income Tariff Provision*, which offers a 65% discount off the service charge or minimum bill. Customers who are 150% or below the federal poverty guidelines qualify for this program by making application to Dollar Energy or one of the agencies listed within a community.
- ◆ *Education on Conservation Measures* conducted by Conservation Consultants, which includes ways to conserve water, including a conservation kit to assist in reducing water usage (installation for those who are unable to install it) and minor plumbing repairs for those who have leaks. All of these assist in lowering water usage. All referrals who qualify for the Low Income Tariff Provision are eligible for these services.

Exhibit X-11 displays the number and percentage of customers enrolled in these various programs.

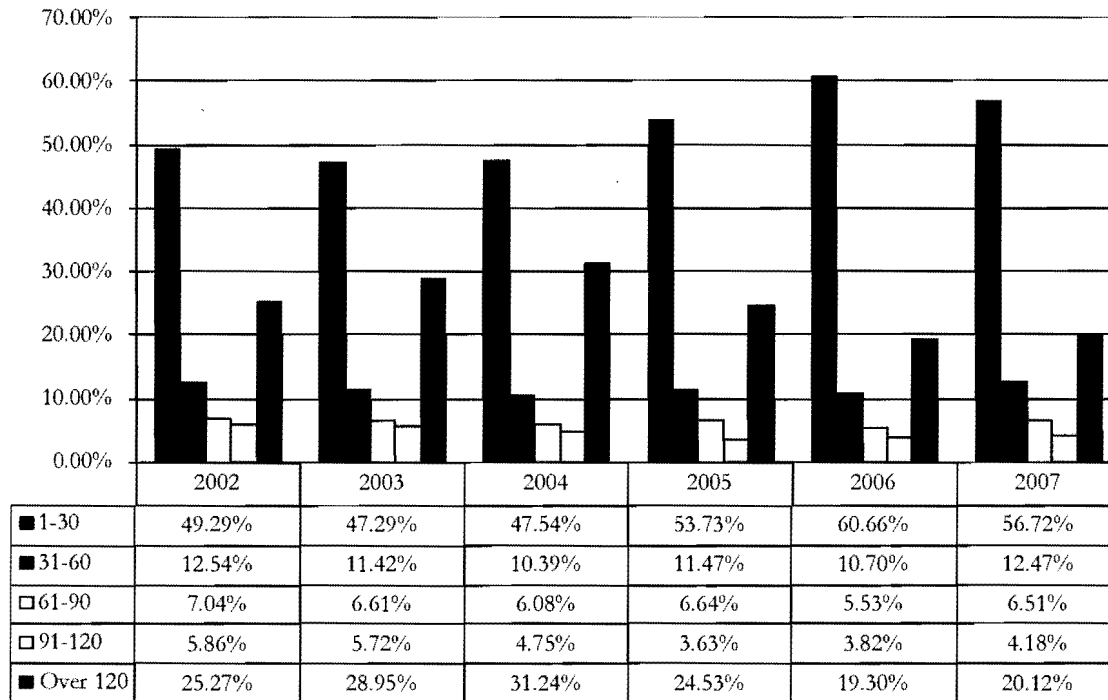
Exhibit X-11
PAWC Customers Enrolled in Various Programs
as of December 31, 2007

	Number of Customers	% of Total Customers in Programs	% of Total Customers
Customers receiving Dollar Energy grants	570	5.28%	0.10%
Customers receiving the discount	6,826	63.27%	1.17%
Education information and discounts	2,258	20.93%	0.39%
Kits	1,058	9.81%	0.18%
Home visits	14	.13%	0.00%
Plumbing visits	63	.58%	0.01%
Total residential customers in programs	10,789	100.00%	
Total residential customers at 2007	581,400		1.86%

Source: Information Response 225 and Company Comments

There are approximately 30 CSC employees that handle credit and collection activities. This organization operates from 7:00 a.m. to 3:30 p.m. Monday through Friday. The PAWC accounts receivable aging (ARA) for the last six years is shown in *Exhibit X-12*. Generally, the PAWC ARA has improved since 2002. For example, the 1-30 day aging category has increased from 49.29% in 2002 to 63.17% in 2007, while the over-120 category has decreased from a high of 31.24% in 2004 to 18.33% in 2007.

Exhibit X-12
PAWC Accounts Receivable Aging Trends
2002 to 2007



Source: Information Response 231 and Task Report Comments for 2007

PAWC collected no security deposits from customers in 2006 and 2007. PAWC has the right to require customer deposits under both a tariff rule and Section 1404 of Act 201, the Responsible Utility Customer Protection Act, of 2004. However, the Company has not accepted customer deposits in years.

Late payments revenues (penalties received on payments beyond the due date, which is roughly 20 days from bill mailing for residential customers and 15 for most other customers), but not yet considered uncollectible), as shown in *Exhibit X-13*, have generally decreased since 2002.

Exhibit X-13
PAWC Late Payment Revenues
2002 to 2007

Year	Water	Wastewater	Total
2002	\$1,161,058	\$53,096	\$1,214,154
2003	\$1,288,746	\$74,075	\$1,362,821
2004	\$1,415,591	\$83,055	\$1,498,646
2005	\$1,407,429	\$102,471	\$1,509,900
2006	\$1,406,839	\$161,483	\$1,568,322
2007	\$1,461,460	\$180,028	\$1,641,488

Source: Information Response 226

Exhibit X-14 references activity of NARS and Phillips & Cohen, third-party collections agencies. The exact number of accounts turned over is not available. The dollar amount for the accounts sent, dollar amount collected, and percentage of dollars recovered appears as a summary in *Exhibit X-14*.

Exhibit X-14
PAWC Agency Collections
2004 to 2007

Year	\$ Placed with Agency	\$ Collected by Agency	% Collected by Agency
2004	\$ 537,837	\$ 44,822	8.39 %
2005	\$ 7,626,411	\$ 613,249	7.66%
2006	\$ 5,354,274	\$ 389,602	7.56%
2007	\$ 4,954,859	\$ 567,968	11.46%

Source: Information Response 228

Effectiveness of the third-party outside collections agencies is not currently measured by a specific standard. American Water is working to establish a scorecard for these vendors to be used for the purpose of determining overall effectiveness. Currently, American Water pays a 23% contingency fee to each agency for funds collected on each account.

Exhibit X-15 illustrates trends in PAWC's allowance for uncollectible trends.

Exhibit X-15
PAWC Allowance for Uncollectible Trends
(\$ Thousands)
2004 to 2007

	Year 2004	Year 2005	Year 2006	June 30 2007 YTD
Balance at beginning of period	\$ 2,090	\$ 2,535	\$ 4,263	\$ 6,182
Provision charged to expense	7,309	9,522	7,683	2,268
Accounts written-off	(7,434)	(8,578)	(6,519)	(2,608)
Recoveries of accounts previously written off	570	784	755	264
Balance at end of period	<u>\$ 2,535</u>	<u>\$ 4,263</u>	<u>\$ 6,182</u>	<u>\$ 6,106</u>

Source: Information Response 232

Payment arrangements are those arrangements negotiated between PAWC and its customers. Results for the number of payment agreements made and the number of payment agreements broken (not completed as agreed upon) are displayed in *Exhibit X-16*.

Exhibit X-16
Agreements Created/Broken
2003 to 2007

Year	Number of Agreements Created	Number of Agreements Broken
2002	61,046	12,002
2003	83,311	16,397
2004	112,145	20,194
2005	59,983	21,857
2006	53,805	19,106
2007	59,548	32,473
Total	429,838	122,029

Source: Information Response 233 and Company Comments

As shown in *Exhibit X-16*, from 2002 through 2007, in total, 429,838 agreements were created. Approximately 101,907 (28%) were broken. The PaPUC also negotiates arrangements for customer repayments. Those arrangements are categorized as budgets. As information, over the same time horizon, 101,907 budgets were arranged, and 34,930 (34%) budgets were broken.

Meter Management

Meter management is managed by American Water on a regional level. The Meter Management group is part of the Customer Relations organization shown in *Exhibit X-6* and is physically located in Wilkes-Barre, PA. PAWC currently has approximately 71 meter readers across the state, as shown in *Exhibit X-17*, all of whom report to field services supervisors. This number does not include field support personnel who perform meter reading on a part-time basis.

Exhibit X-17
PAWC Full-time Meter Readers
2004 to 2007

Meter Readers	2004	2005	2006	2007
Actual	70	74	72	71
Budget	71	77	71	71

Data includes full-time meter readers. Field support personnel who perform meter reading on a part-time basis are not included
Source: Information Response 234

Currently, most of PAWC water meters are manually read on either a monthly or bimonthly basis.

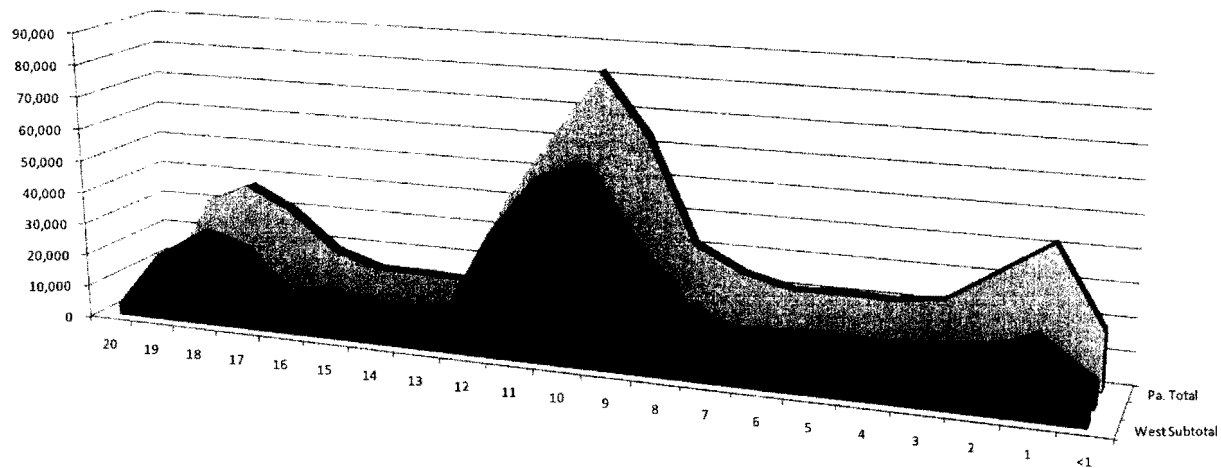
American Water developed a "Sourcing Strategy Document and Strategy Recommendation" in 2005, which evaluated meter pricing among manufacturers for standard and encoder registered meters. As a result, PAWC obtains meters on long-term (five years) contracts from a single approved vendor until a new contract is rebid in 2010.

In addition, an American Water "Strategy and Standard Economic Evaluation" was developed to evaluate and implement automatic meter reading (AMR) technology at the local operation level. Several trials have been run in American Water, including one Pennsylvania trial at the Connellsville District. The current thinking at American Water is that the fixed-network advanced metering system (AMS) is the preferred AMR technology. The fixed-network more easily supports other capabilities such as backflow alerts and leak detection via acoustic monitoring, as compared to the mobile AMR (M-AMR). In short, either technology could be used to just read meters, but the fixed-network supports additional capabilities.

PAWC maintains a length-of-service program in which meters are periodically removed from service and tested. Each water district company must either have its own meter testing facilities or use those of an affiliated company. All new meters, replacement and new installation, and appurtenances are installed by PAWC personnel and/or subcontractors. The decision to outsource contract labor is determined on a case-by-case basis, which includes a review of quantities to be replaced, labor needs, and scheduling parameters.

The installation age of PAWC water meters is shown in *Exhibit X-18*. Water meters are usually replaced in 20 years, unless they have been replaced earlier as a part of the meter testing program. As shown in *Exhibit X-18*, PAWC meters that are approaching the 20 years replacement timeframe will be approximately 35,000 per year for the next several years. Western PA has a significantly larger number of meters coming due for replacement than eastern PA as shown in *Exhibit X-18*.

Exhibit X-18
Meter Age Histogram
as of December 31, 2007

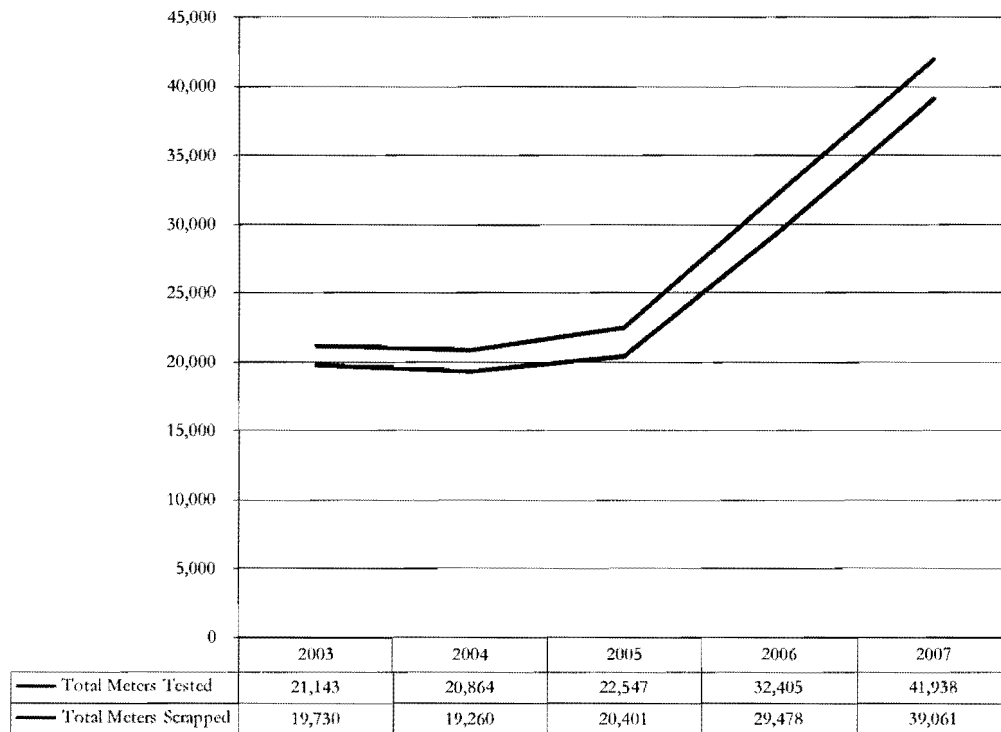


	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	<1
West Subtotal	3,712	20,902	29,284	24,825	9,226	6,154	6,887	6,246	8,285	9,768	25,601	28,001	14,594	13,146	8,844	8,473	8,805	9,514	17,685	24,244	10,784
East Subtotal	326	10,108	8,002	5,380	9,219	7,791	6,892	7,034	33,492	51,953	56,659	35,535	17,110	11,180	11,903	12,664	11,897	13,125	14,724	17,809	7,119
Pa. Total	4,038	31,010	37,286	30,205	18,445	13,945	13,779	13,280	41,777	61,721	82,260	63,536	31,704	24,326	20,747	21,137	20,702	22,639	32,409	42,053	17,903

Source: Information Response 879

As a result, PAWC has accelerated its meter testing program over the five years as shown in *Exhibit X-19*. All of the standard 5/8" and 3/4" meters are scrapped and replaced with new meters under current meter purchase contracts. Encoder 5/8" and 3/4" meters removed from service for periodic testing will be returned to service if the test results indicate that the meter is accurate at all three test rates (1/4 gallon, 2 gallon, 15 gallon). All encoder type meters and standard meters 1" or larger removed from for services for periodic testing will be returned to service if test results indicate the meter is accurate at all three test rates (1/4 gallon, 2 gallon, 15 gallon).

Exhibit X-19
Meter Testing Rates
2003 to 2007



Note: Total meters scrapped only reflects 5/8" meters
Source: Information Response 879

Theft of Service Management

Meter readers are charged with inspecting customer locations for unauthorized connections during the meter reading process. In the 2005 to 2006 timeframe, a meter reading training manual was developed for the Southeast Region as a model for American Water. The training is co-delivered by local supervisors and subject matter experts (SMEs). The program was requested due to an Internal Audit finding that specified that there was no documented training program for employees who read meters.

This training program contains some reference to the identification of theft as one of the responsibilities of the meter reader. It is the responsibility of the meter reader to inspect the meter for unauthorized connections during the meter reading process. PAWC has been investigating active premises without consumption / inactive premises with consumption to prevent theft of service. Separate reports from the ECIS system have been developed to flag such accounts for investigation. The results of these investigations are shown in *Exhibit X-20*. Since very late December 2004, as part of PAWC's efforts to

reduce non-revenue water, investigations have been intensified when meters have recorded consumption at inactive premises; or no consumption is recorded at active premises. This effort has resulted in significant back billing.

Exhibit X-20
Theft of Service Statistics
as of December 31, 2007

Year	Usage Back Billed	Revenue Back Billed
2005	176,889,900	\$902,428
2006	100,385,100	\$667,467
2007	129,071,800	\$506,701
Total	406,346,800	\$2,076,596

Source: Information Response 875

In addition to inactive with consumption / active with no consumption investigations, local offices investigate flat-rate fire service to ensure that all are being billed correctly, and that no domestic water usage is being bypassed through the fire service check meters.

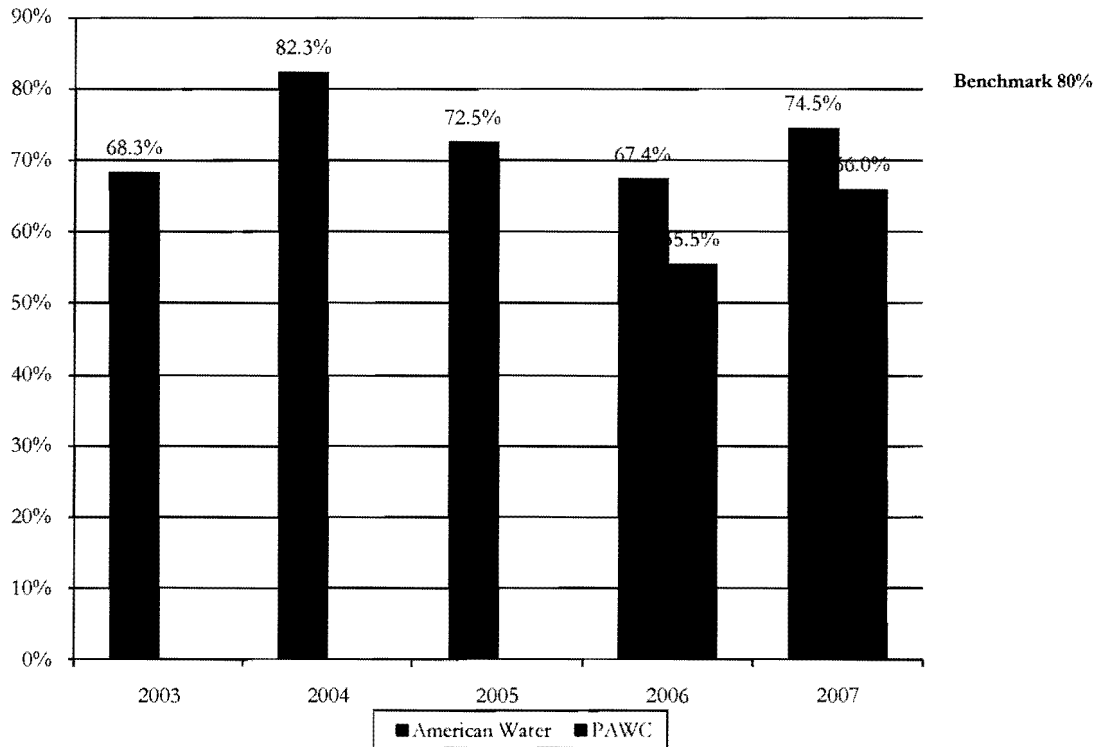
PAWC bills anyone caught taking water from a hydrant without a meter and backflow preventer, and correct straight-piped meter situations discovered while conducting its cross connection / backflow program. PAWC can back bill for a period of up to four years anyone caught taking water.

B. Findings & Conclusions

Finding X-1 American Water call centers have failed to meet industry standard service levels.

Prior to 2006, customer service performance data, including percentage of calls answered within 30 seconds, were tracked and reported only for American Water as a whole. Beginning in 2006, percentage of calls answered within 30 seconds has been tracked and reported separately for PAWC. *Exhibit X-21* illustrates percentage of calls answered within 30 seconds for 2002 through 2007 for PAWC and American Water as a whole.

Exhibit X-21
PAWC and American Water % of Calls Answered within 30 Seconds
2002 to 2007



Source: Information Response 204

The percentage of calls answered within 30 seconds at American Water has trended up to peak at approximately 82% in 2004, and then steadily declined to approximately 67% in 2006. Performance rebounded in 2007 with nearly 75% of the calls that the Alton CSC answered being within 30 seconds. CSC performance has fallen short of the industry standard benchmark (80%) in four of the last five years. It is especially troubling that the PAWC calls have an even lower response rate. In 2007, the dedicated Pennsylvania group of call handlers in the Pensacola call center was only able to respond to 66.0% of calls within 30 seconds.

The poor service level is compounded by the fact that a high percentage of calls never get through to a representative. In 2006, 16% of all calls were met with a busy signal, meaning the call queue was full. In the first half of 2007, this number had risen to slightly over 18%. *Exhibit X-22* provides the number of calls by PAWC customers, the number of unanswered calls (where customers would hear an immediate busy signal, and calls that were delivered to the phone switch and routed to a vector directory number (VDN), which is an extension number used by Avaya ACD systems, but not answered. The percentage of unanswered calls is also presented in this exhibit.

Exhibit X-22
PAWC Customers' Unanswered Calls (Alton and Pensacola)
2002 to 2007

Year End	PA 800# Volume	# of PA Unanswered Calls	% of PA Unanswered Calls
2002	828,153		
2003	869,835		
2004	857,981	49,710	5.8%
2005	1,034,100	29,105	0.2%
2006	1,033,972	164,802	16.0%
2007	585,054	106,599	18.2%

2007 through June 30, 2007.

No blocked call data is available prior to March 2004.

Source: Information Response 202

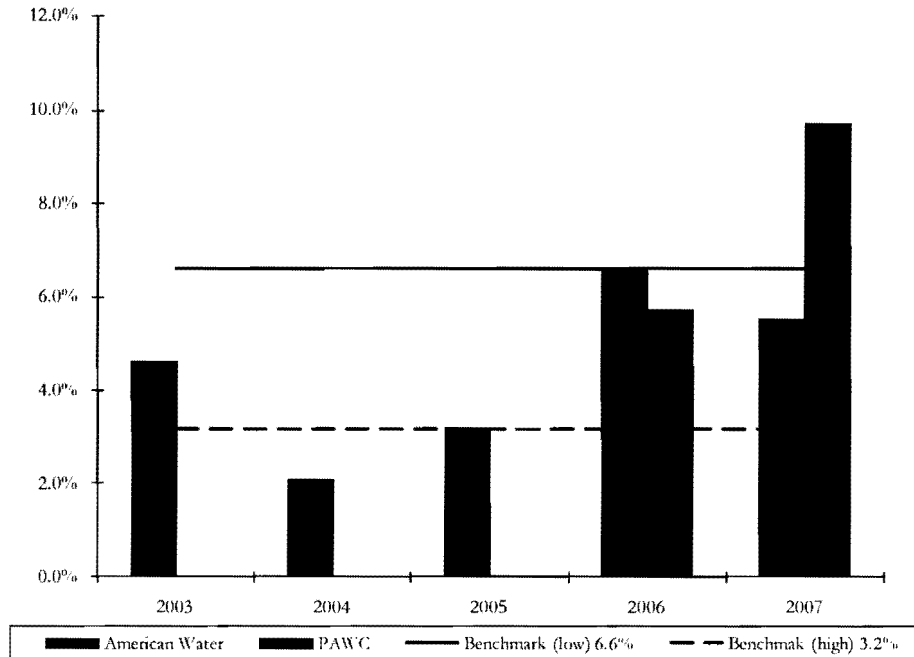
PAWC has made changes to improve its ability to answer PAWC customer calls. Two significant improvements have been made to American Water telephony:

- ◆ On February 13, 2007 a rollover trunk group was expanded from 45 trunks to 94 trunks.
- ◆ On May 3, 2007 routing was changed to ensure that all PA toll-free numbers are routed to the rollover group when the PA trunk is busied out.

Prior to May 3, 2007 the percentage of calls that received busy signals reached as high as 15.95% (period from Feb 10 - May 2). By September 19, the percentage of calls that received busy signals dropped to 8.72%.

Customers also experienced long hold times in the call queue. *Exhibit X-23* provides a comparison of the abandonment rate for American Water as a whole versus that for PAWC customers. The call abandonment rate after 30 seconds at American Water has trended downward (favorable) from 2002 to 2004; however, it has shifted upwards (unfavorable) from 2004 to 2006. Prior to 2006, customer service performance data, including percentage of calls abandoned after 30 seconds, was tracked and reported only for American Water as a whole. Beginning in 2006, abandonment rate has been tracked and reported separately for PAWC. In the first half of 2007, 5.4% of all American Water callers hung up having waited more than 30 seconds and not reached a representative. The rate was even higher for PAWC customers. In the first half of 2007, 12.4% of Pennsylvania callers hung up after waiting 30 or more seconds to speak to a company representative.

Exhibit X-23
American Water and PAWC Call Abandoned Rates
2002 to 2007



Source: Information Response 204 and Company Comments

In setting benchmarks, American Water reviewed five benchmark studies of call abandonment rates. The two used in *Exhibit X-23* are:

- ◆ *Low Benchmark* – Customer Contact Council (CCC), an industry trade organization, is a long-term benchmarking effort initiated in 2005.
- ◆ *High Benchmark* – Purdue University (Utility Industry Best) is a benchmarking study (published February 2006) representing 50 to 75 utilities.

Insufficient number of representatives, inexperienced representatives, increasing call volumes, and increasing call length are certainly all contributing factors to the poor performance at the PAWC call center operations.

Finding X-2 Customer service representatives are taking longer to complete calls and follow-up work.

Among the reasons for the high abandonment rate cited by the company is that the average call length is increasing and has been since 2004. The greater the average call-handle time (40 second increase or 12% since 2004), the fewer customer service representatives are available to answer customer calls.

Average handle time (in seconds), including talk time, hold time, and after call work time, decreased from 2002 to 2004, as shown in *Exhibit X-24*. Then it has increased since 2004 (when it was at its low of 326 seconds) to its 2007 rate (409 seconds).

Exhibit X-24
PAWC Average Handle Time
(Seconds)
2002 to 2007

	2002	2003	2004	2005	2006	2007
Average Handle Time	388	349	326	337	352	409

Source: Information Response 204 and subsequent PAWC update

IT network delay problems have contributed to the increased call length. The call centers experienced periods of extreme network latency starting in April 2006, which lasted for approximately two months (with intermittent latency for the next four to five months). This caused CSRs to sometimes wait over 60 seconds for screens to refresh while assisting customers. This caused CSRs to answer fewer calls while increasing the average time to answer the next call.

Increasing complexity (especially for Pennsylvania calls, which are frequently related to establishing payment plans), CSR turnover, and the associated problem of inexperienced staff were also cited as contributing factors.

Finding X-3 The Pensacola CSC CSR turnover rate exceeds industry standards.

Exhibit X-25 shows the annual turnover rate at American Water's two national call centers in Alton and Pensacola. (Data specifically for the Pennsylvania group is not available.)

Exhibit X-25
American Water CSR Turnover Rates By Call Center
2003 to 2007

Year End	Alton CSC	Pensacola CSC
2003	44.79%	Not open
2004	43.67%	Not open
2005	20.45%	29.75%
2006	17.30%	40.35%
2007	14.60%	31.82%

Source: Information Response 262 and Company Comments

The company reports the CSR turnover rate in 2006 to be 17% in Alton and 40% in Pensacola. Turnover appears to have declined in 2007. The rate for last year was approximately 15% in Alton and 32% in Pensacola.

A 2007 study by the International Customer Management Institute (ICMI) found that 54% of call centers had external turnover rates of 20% or less. Alton's rate would place it roughly comparable to those call centers. Of greater concern is the Pensacola call center, which is the primary center serving Pennsylvania customers. It has a rate far exceeding the average.

Finding X-4 American Water has made no effort and has no plans to implement initiatives aimed at reducing employee turnover.

Schumaker & Company asked for both the company's actions to date to reduce turnover and for future plans. In both cases the company responded "Turnover in the Alton and Pensacola call centers is consistent with the expectations of a customer service environment." We assume this statement to mean that the turnover rates are average and acceptable. We find the turnover rates, especially in Pensacola, to be above average (unfavorable). Even if they were average, we would not expect a company with the resources of American Water to be content with average performance.

American Water uses a staffing agency (Express Personnel) to recruit CSRs. The CSRs remain on the staffing agency's payroll for 90 days before becoming American Water employees (temporary to hire). This arrangement allows American Water to select the highest performing representatives and not make permanent job offers to lower performing representatives. We would expect this arrangement to contribute to higher performance levels and lower turnover, but this appears to not be the case.

In addition, this allows American Water to exclude the turnover in the first 90 days from its turnover calculation for Pensacola. Whereas in Alton, the turnover rate includes CSRs who have left during the first 90 days of employment. Because of this, the turnover rates of the two centers is not an entirely *apples to apples* comparison and we would expect Pensacola to have a statistical advantage.

Insufficient and inexperienced staff is certainly contributing factors to the low service levels reported by American Water. The higher turnover rate in Pensacola is indeed consistent with the lower service levels reported for the Pennsylvania group. In fact, American Water itself sites high turnover as one of the reasons why its service level of answering calls within 30 seconds falls below the industry standard of 80% of calls answered within 30 seconds.

Beyond this basic service level metric, high turnover can affect many aspects of call center performance. In its *Agent Turnover and Retention Report, 2007* ICMI states that "agent turnover adversely impacts many facets of a call center and the enterprise as a whole." According to the centers surveyed, no issue is as negatively affected by attrition as is service quality (cited by 71% of respondents), followed by productivity (64%), training and selection costs (59%), employee morale (55%), recruiting costs (47%), and stress (47%).

It should be noted that the CSR turnover data included in this *Exhibit X-25 (Finding X-3)* is from a resubmission by the company in response to our initial draft report. PAWC indicated that the initial submission cannot be validated by the new HR manager for the CSC. The initial turnover data differs substantially from the new submission. Schumaker & Company agrees that the new data is derived from a generally accepted calculation. The calculation method used in the company's initial submission is unknown. We make this point here to further reinforce that turnover rates were not routinely tracked and reported by the company prior to 2008.

While the newly submitted data shows a decline in CSR turnover in Pensacola, Schumaker & Company remains troubled by the company's conclusion that "Turnover in the Alton and Pensacola call centers is consistent with the expectations of a customer service environment" given that the company appears to, until recently, have not tracked and was unable to accurately report CSR turnover in the call centers.

Finding X-5 More than one in four newly hired CSRs leave prior to completing all initial training and close monitoring.

In the first half of 2007, American Water hired 65 CSRs. Of these, 48 successfully completed all training and the "nesting pod" period. (The nesting pod is a period of four to five weeks in which a CSR takes calls, but is closely monitored by a supervisor. After completing this period, CSRs are assigned to a regular supervisor, given full responsibilities, and are subject to standard monitoring.)

American Water reports that it costs \$2,554 to hire and train an employee in Alton and \$2,400 in Pensacola; however, these costs do not reflect the costs associated with those CSRs who do not complete all training and the nesting pod period. Spreading the hiring costs of these unsuccessful hires over the costs of successful hires increases the costs by about 35%.

The American Water Vice President of Customer Service said that it is working to improve the quality of new hires by strengthening its recruitment practices. It appears that the company has not been successful at strengthening its practices. In addition, the Human Resources Director responsible for the call centers responded to our request to learn more about these changes by saying that the company has not changed any of its recruitment practices. The company also continues to use the same staffing firm under the same contract in Pensacola.

As a follow-up, Schumaker and Company again asked the Human Resources Director what is being done to improve the quality of CSRs that American Water hires. He responded with the following statement: "There have been no changes in the recruiting process at either Alton or Pensacola to improve recruiting of successful CSRs, as there have been no specific problems identified in the process at this time."

American Water has made some enhancements to its CSR training process, most notably being additional customer service training and refresher training for billing, collections, and service orders. In addition, the company continues to look for ways to enhance training.

Schumaker & Company consultants would expect new hires in Pensacola to be fairly successful, as they typically have prior call center experience. (The Pensacola area has many national call centers.) Also, recruiting is done by an outside firm, thereby allowing the company to hire only the best CSR candidates.

Finding X-6 After several years of a decreasing number of CSRs, American Water now plans to hire additional CSRs.

Although call volume and average call length has been increasing, the number of CSRs available to answer calls has been declining. *Exhibit X-26* shows the net loss of CSRs for 2005 to 2007. (Data specifically for the Pennsylvania group is not available.)

Exhibit X-26
CSR Staffing Level Changes for American Water as a Whole
2005 to 2007

	2005	2006	YTD 5/31/07
CSRs Lost	85	107	61
CSRs Hired	60	76	47
Net (Loss)	(25)	(31)	(14)

Source: Information Response 204

In 2008, American Water has committed to increasing the number of CSRs from 482 (September, 2007 level) to 519 (a net gain of 37). However, these new positions have not as yet been allocated between the two call centers.

It should be noted again that the newly appointed HR Manager for the CSC cannot validate the data in *Exhibit X-26*. In its response to our initial task report, PAWC indicates that “New positions have been allocated between the Alton and Pensacola Customer Service Centers as evidenced by a total of five (5) new hire classes year to date 2008; three (3) in Alton and two (2) in Pensacola.” PAWC does not indicate if these new training classes will increase the overall staffing levels. Schumaker & Company remains concerned about the replenishment rate of CSRs (who leave the company or are transferred to other positions).

Finding X-7 Despite the company’s unfavorable service levels, PAWC customers appear to be generally satisfied with the contact they have with the company.

Data provided by a third-party assessment suggest that approximately 90% of those PAWC customers surveyed were “somewhat satisfied” to “extremely satisfied” with their CSC service contact. Nonetheless, dissatisfied customers rose from 8% in 2006 to 10% in 2007. Special attention and direct

follow up is provided to PAWC customers who express severe dissatisfaction with the company. These customers are flagged in an alert database, which allows the CSC or PAWC personnel to contact the customer as a means to resolve a complaint.

Finding X-8 The Help Queue has proven effective in improving consistency of answers to customers and allowing supervisors to focus more of their time on CSR coaching and development.

The Help Queue (centralized CSR support), which is located in Alton, handles support calls for both call centers in an effort to provide first-call resolution to customer requests. In addition, this group handles escalated calls that the initial responding representative can not resolve. The Help Queue is currently staffed with 24 Customer Service Specialists and two Team Supervisors. This highly skilled group, all of whom have been trained in Pennsylvania specific rules and regulations, allows call-handling supervisors to dedicate more time to coaching, rather than dealing directly with customer problems. In fact, supervisors report that the time available for employee coaching went from about 60% (prior to the implementation of the Help Queue) to 75% to 80% (following implementation). In addition, the Help Queue appears to have had a positive effect on increasing the consistency of answers provided by all CSRs.

Finding X-9 Neither American Water nor PAWC have a customer accessible website to provide basic customer self assistance.

Currently, there is no capability for customers to perform some basis self-service inquiries regarding their accounts. With call volumes being forecast to grow at a 2% to 2.5% rate per year, providing customers with the ability to perform some basic inquiries about their account from a secured website could possibly help to lower this growth rate.

Finding X-10 Neither American Water nor PAWC supports electronic billing at this time.

American Water currently does not support electronic billing capabilities. Other utilities have developed the capability to electronically bill customers and are finding the number of customers electing to use electronic billing increasing each year.

Finding X-11 American Water has very limited customer self-serve options available on its IVR system.

The IVR system that went live in August 2005 has not delivered the desired results (reduction in "live" calls). The IVR was originally brought on-line January 3, 2005 but crashed on February 10, 2005. It was then on-line and off-line multiple times until August 2005. The CSC has not realized the projected decrease in live calls, which left the call centers understaffed during the busy summer season and unable to effectively respond to the actual call volume.

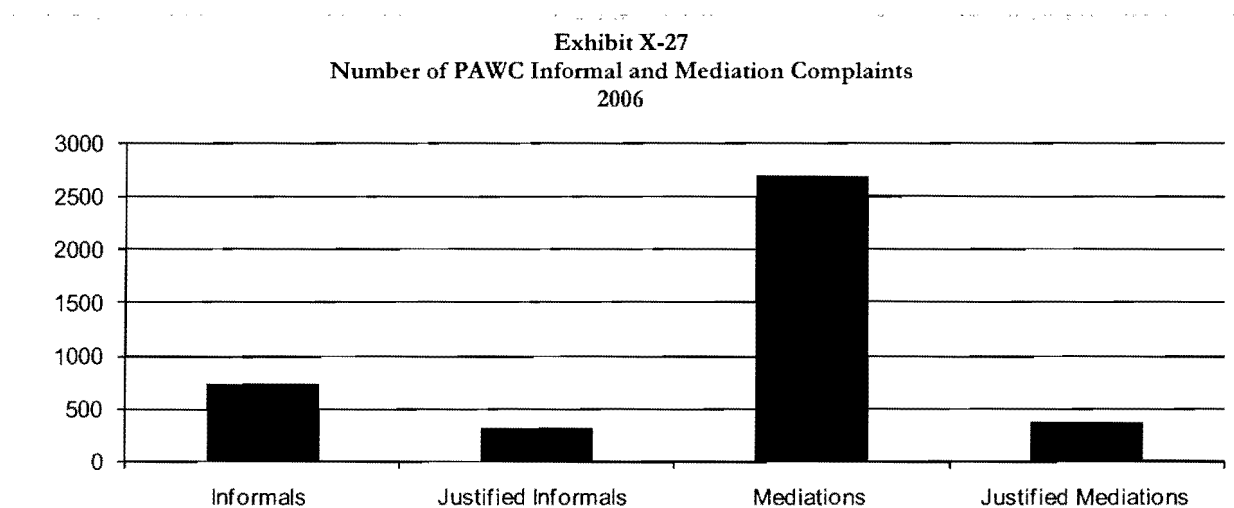
In addition, the IVR also lacks a number of self-service options, such as service turn-on, service turn-off, and automatic bill-pay features, which account for approximately 3,500 live calls per day. Although not all such calls would be handled by customers using the IVR and the number of calls handled by each CSR is not a precise statistic, 3,500 calls translates to approximately 60 full-time equivalent (FTE) agents.

Finding X-12 The trends in various types of complaints (informal, mediation, executive, and formal) are generally increasing.

In some cases, an analysis of customer complaints and disputes can help identify issues concerning the relationship of an organization with its customers. PAWC tracks a number of different indications of customer complaints as various indicators of customer satisfaction. Complaints to the PaPUC generally fall into two categories.

- ◆ *Informal complaints* are primarily billing and/or service related issues.
- ◆ *Mediation complaints* are primarily related to collection action for delinquent payments.

PAWC investigates each complaint to assess process performance. The number of PAWC informal and mediation complaints in 2007 is shown in *Exhibit X-27*.



Source: Information Response 207 and Company Comments

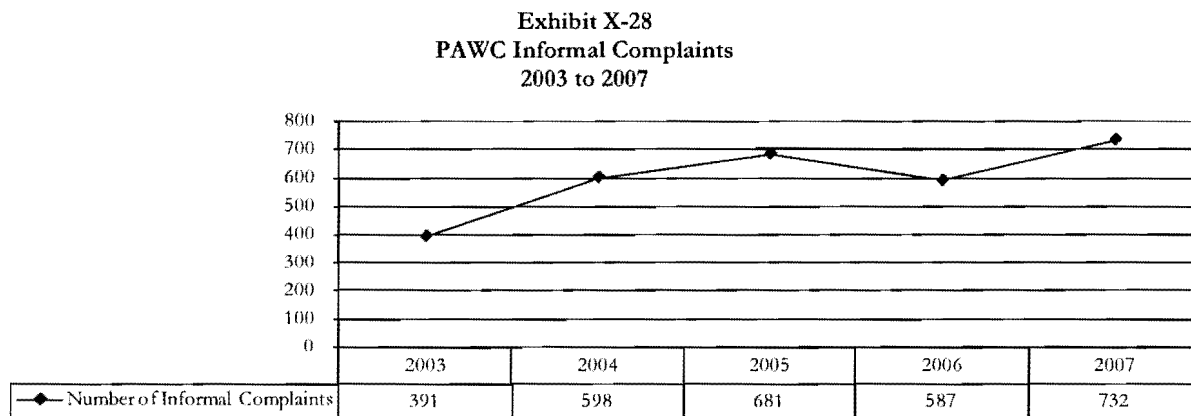
In 2007, PAWC had 732 informal complaints, of which 316 (43.17%) were potentially justified. There were 2,679 mediation complaints, of which 369 (13.77) were potentially justified. Potentially justified are based on a review and analysis by PAWC compliance representatives (based on the PaPUC's justified rules). Subsequently violations may occur when infractions of the PaPUC regulations are found as a result of the PaPUC review of the report submitted by PAWC in response to the informal complaints.

Other types of complaints include:

- ◆ *Formal Complaints* – These complaints go directly to the PaPUC prior to being sent to the PAWC.
- ◆ *Executive Complaints* – These complaints or questions go directly to PAWC or the call center by a customer or individual, which need to be responded to by Company personnel. These complaints usually do not involve the PaPUC during the process, but are handled completely within PAWC or the executive resolution team (ERT) within the call center.
- ◆ *Disputes* – These are disputes usually handled within the call center. They usually do not involve the PaPUC in the process, but are handled completely within PAWC call center.

Informal Complaints

The number of informal complaints received by PAWC for the years from 2003 to 2007 is shown in *Exhibit X-28*. As shown in *Exhibit X-28*, the trend in these complaints is increasing over time.

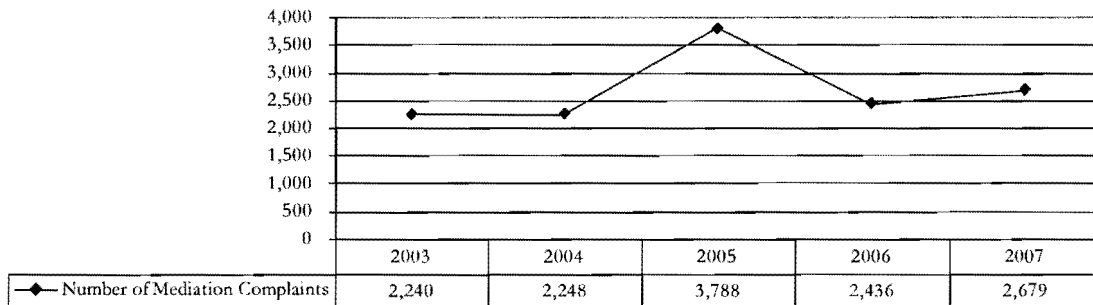


Source: Information Response 629 and Company Comments

Mediation Complaints

The number of mediation complaints received by PAWC, as documented internally, for the years from 2003 to 2007 is shown in *Exhibit X-29*. Mediation complaints spiked in 2005 with the increased volume of termination notices issued in 2005.

Exhibit X-29
PAWC Mediation Complaints
2003 to 2007



Source: Information Response 630 and Company Comments

Complaint Turnaround Time

Average turnaround time (days) for responding to informal and mediation complaints, as documented internally for the years from 2003 to 2007, is shown in *Exhibit X-30*.

Exhibit X-30
PAWC Average Turnaround Time for Complaints
(Days)
2003 to 2007

Year	Informal Complaints	Mediation Complaints
2003	3.25	2.54
2004	3.68	5.01
2005	2.96	19.70*
2006	3.49	4.29
2007	3.11	4.01

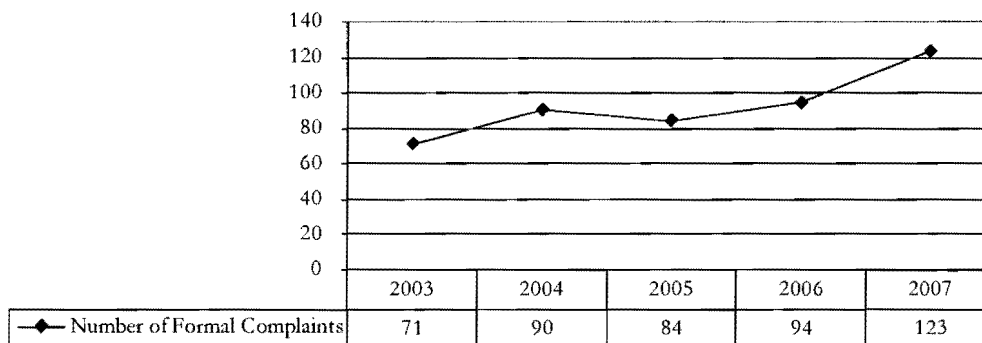
Source: information Response 633

Note: *At the PaPUC's request, PAWC stopped terminations for all customers (i.e., not just those having hot water heat) for the winter of 2004-5. It created a backlog when the PaPUC resumed terminations on April 1, 2005, and thereby increased the average turnaround time for mediation complaints in 2005.

Formal Complaints

Formal complaints are those that go directly to the PaPUC prior to being sent to the PAWC. The number of formal complaints for the years from 2003 to 2007 is shown in *Exhibit X-31*.

Exhibit X-31
PAWC Formal Complaints
2003 to 2007



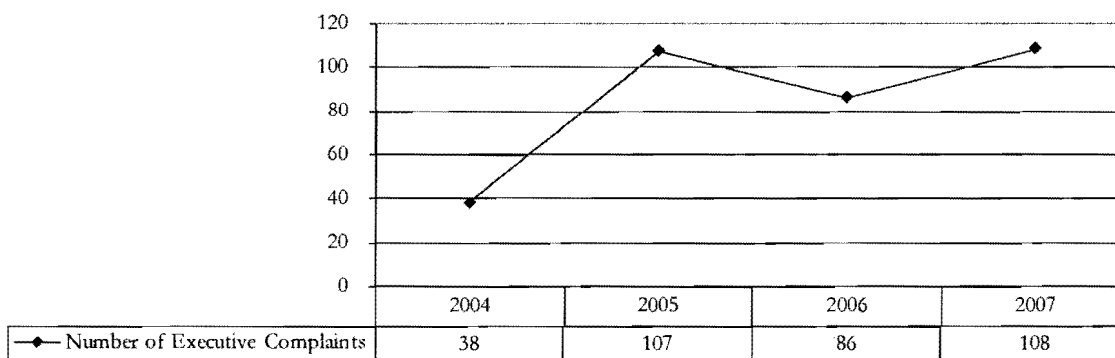
Source: Information Response 632 and Company Comments

Note: In 2007, PAWC received 23 formal complaints in response to its announced intention to introduce chloramines into the water treatment process in its Mechanicsburg service territory.

Executive Complaints

Executive complaints have only been tracked since June 2004, when the executive resolution team (ERT) was established at the Alton Call Center. The number of executive complaints for the years from 2004 to 2007 is shown in *Exhibit X-32*.

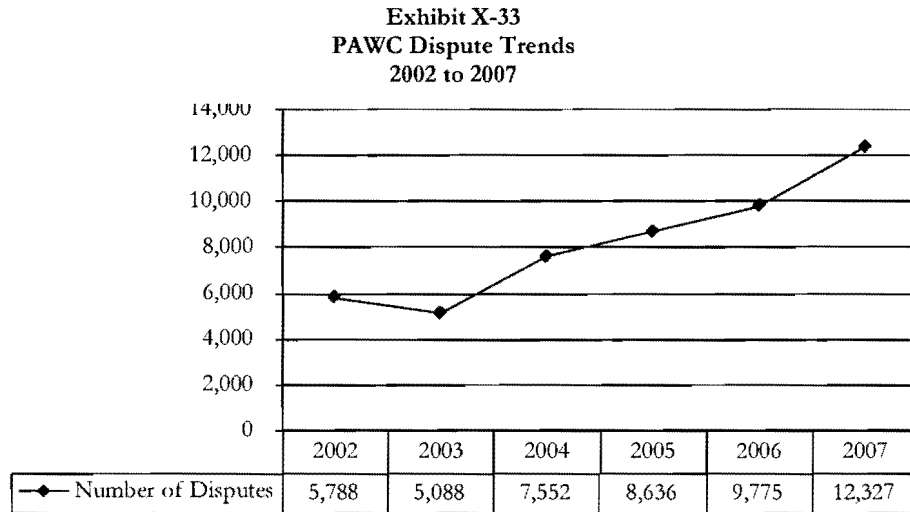
Exhibit X-32
PAWC Executive Complaints
2004 to 2007



Source: Information Response 631

Finding X-13 The number of disputes has increased significantly since 2004.

Disputes are complaints handled by the CSC. As such, their numbers reflect customer satisfaction with various aspects of the CSC operations. The trend in disputes over the last several years is shown in *Exhibit X-33*. There is a significant increasing trend in disputes.



Source: Information Response 634 and Company Comments

American Water has not performed any analysis of dispute rates. A comparison of disputes to call volume over the six years indicates that disputes account for 0.58% to 1.0% of calls.

Finding X-14 **There is a significant amount of over estimating in the billing process.**

There is a significant amount of over estimating in the billing process, as shown in *Exhibit X-34*.

Exhibit X-34 PAWC Billing Errors 2003 to 2007					
	2003	2004	2005	2006	2007
Cancelled/Rebilled	45,531	13,807	37,084	48,273	55,046
Adjusted	24,027	150,386	313,765	308,617	280,929
Total	69,558	164,193	317,853	313,367	335,975
Adjusted by Type					
Billing Error	1,522	760	283	811	209
Bad Dial	9	13	5	5	6
Under Read	157	235	116	13	17
Over Estimate	19,023	146,390	309,925	302,966	273,855
Over Read	3,289	2,987	3,435	3,527	4,037
Under Estimated	19	1	0	2	123
Final Read	8	0	1	3	0
Prior Unbilled Water	0	0	0	1,290	2,644
Meter Reading Dial	0	0	0	0	38
Total	24,027	150,386	313,765	308,617	280,929

Source: Information Response 221 and Company Comments

As shown in *Exhibit X-34*, over estimating accounts for approximately 98% of billing errors. Considering that each of these accounts is manually reviewed and in some cases a field service technician would be dispatched to do a meter reread, this is a significant cost to PAWC.

During 2006, 302,966 over estimates occurred. Each of these bills would have required someone to review and adjust the bill (assume five minutes per bill). According to PAWC management, many of the over-estimated accounts are automatically adjusted by the software, and not manually reviewed. Auto-adjusted estimates are identified by adjustment fee types 9AOE1, 9AOE2, 9AOE3, AND 9AOE4. Using the 2006 information, the Alton call center identified 196,802 such adjustments applied by the auto-adjustment credit module for PAWC.

In addition, service orders generated to obtain meter re-reads can also be tracked, as they are coded EST (customer request for reread) or UEST (company-identified reread, which began being tracked in 2007). The number of ESTs in 2006 was 6,367.

Based on this information, the number of accounts manually reviewed is 99,797 (302,966 – 196,802 – 6,367). The number of accounts manually reviewed and reread in the field is 6,367. Using Schumaker & Company's time and cost assumptions along with the refined numbers obtained from PAWC, realistic annual potential savings of \$300,000 to \$400,000 have been estimated as shown in *Exhibit X-35*.

Exhibit X-35
Additional Costs From Over Estimates
as of December 31, 2006

Activity	Calculation	Estimated Costs Savings
Manual Review	99,797 accounts x 5 minutes per account / 60 minutes per hour x \$30 per hour	\$249,500
Field Reread	6,367 accounts x 35 minutes per account / 60 minutes per hour x \$30 per hour	\$111,500
Total Costs		\$361,000

Source: Schumaker & Company Analysis and PAWC Input

Many utilities have significantly eliminated over estimates by going to automatic meter reading. One of the biggest drivers of estimating is not being able to read each meter every month due to access problems. Water meters are typically located inside a house, and although they may be connected to a remote to the outside of a house, there is still a higher number of missed reads when meter readers must visit each location to obtain a reading rather than using an automatic meter reading system. Meter readers are still the predominate method used for reading meters at PAWC.

Finding X-15 A business case has been developed for an upgrade to the Advantex software used in FRCC operations.

The Advantex system is used for managing the field dispatching of Field Service Technicians at PAWC. Field Service Technicians are responsible for meter sets, meter change outs, meter rereads, meter turnoffs / ons, and other short duration tasks that are typically dispatched on a day before or same day basis. The current software could be characterized as a first-generation system compared to what is currently available. For example, the current version of the software does not include a good mapping interface. The interface to a mapping application combined with a global positioning system (GPS) in the vehicle would provide dispatchers with better positional information regarding field technicians, which would allow the dispatchers to more efficiently assign time-critical service orders to the closest field service technician. Furthermore, positional information would also be a safety consideration in the event that a field technician has an incident.

C. Recommendations

Recommendation X-1 **Invest in new customer interfacing technology, including IVR, electronic billing, and web self-service capabilities. (Refer to Finding X-1, Finding X-2, Finding X-6, Finding X-7, Finding X-9, Finding X-10, and Finding X-11.)**

New technology has many advantages and its use is increasingly expected by customers. Customer self-service technology, such as an IVR that provides up-to-date account information and bill paying options, electronic billing, and web-based bill-pay options allow customers to perform routine transactions without talking to a CSR. This reduces call volumes as well as wait times. Thus the technology potentially increases customer satisfaction for both those customers using it and those that require the service of a CSR, and have shorter wait times.

It is beyond the scope of the audit to present a technology plan. Nevertheless, as a result of this recommendation, we do expect the company to produce an assessment and plan that leads to new technology and improved customer service. This approach seems far preferable as a long-term strategy to increasing the number of CSRs, although that may be a necessary short-term response.

Recommendation X-2 **Analyze employee turnover at the Pensacola Call Center and develop strategies to reduce turnover. (Refer Finding X-3 and Finding X-4.)**

Schumaker & Company strongly disagrees that the CSR turnover rate in excess of 50% at the Pensacola Call Center is “consistent with the expectations of a customer service environment.” Even if it were, it is inconceivable that Human Resources does not see addressing this fact as worthy of its attention. Turnover affects customer service levels and is a major cost to the organization. CSR turnover should be a major key performance indicator for the Human Resources function and a plan should be developed and implemented to address this problem.

Recommendation X-3 **Strengthen recruitment, selection, and training practices to improve the quality of new CSR hires. (Refer to Finding X-1, Finding X-2, Finding X-3, Finding X-4, Finding X-5, Finding X-6, Finding X-7, and Finding X-8.)**

Improving the quality of new CSR hires will surely have a positive effect on turnover rates. In addition we would also expect improvements in service levels. Central to a plan to improve hiring quality is the establishment of metrics for the hiring function. These might include, for example, percentage of hires that successfully complete training, first six-month performance evaluations, and supervisor satisfaction, among others. The Human Resources function should then develop and implement a plan to improve the quality of new hires and regularly report its success.

Recommendation X-4 Develop a Pennsylvania-specific customer service scorecard and regularly report associated metrics to the PAWC President. (Refer to Finding X-1, Finding X-2, and Finding X-7.)

In some cases, Schumaker & Company had trouble getting data specific to the Pennsylvania call handling group. In fairness, this is due in part to the newness of the group. Nonetheless, American Water sees Pennsylvania as being a significant operation for the company and having special needs. It stands to reason that there should be a regular produced scorecard that reports the performance of this group to PAWC management.

Recommendation X-5 Perform an analysis of the increase in complaint trends that PAWC is currently experiencing. (Refer to Finding X-12.)

All of the trends in informal, mediation, formal, and executive complaints are generally increasing. PAWC needs to perform a root cause analysis of the reasons for the increase in these numbers. Categories for each of these types of complaints should be developed, reported, and steps taken to address the root causes that are identified.

Recommendation X-6 Perform an analysis of the growth in PAWC disputes. (Refer to Finding X-13.)

PAWC needs to perform a root cause analysis of the reasons for the increase in disputes. Ideally, each dispute would have been categorized at the time it was created, such that this information could be summarized without having to physically review and categorize each individual dispute after the fact. Schumaker & Company consultants understand that the methods for resolving disputes in Pennsylvania are currently in the process of being revised and improved. Final improvements have not been implemented at this time. Specific issues being addressed are improved identification and tracking of disputes, improved adherence to process, increased awareness of time limits for resolution, and additional training. While not finalized at the end of 2007, it is expected that personnel other than the Account Resolution Team (ART) will be involved in the resolution of disputes. Because final improvements have not yet been made, it is difficult to be specific on future changes to this process. However, it is expected that changes will be finalized by November 30, 2007.

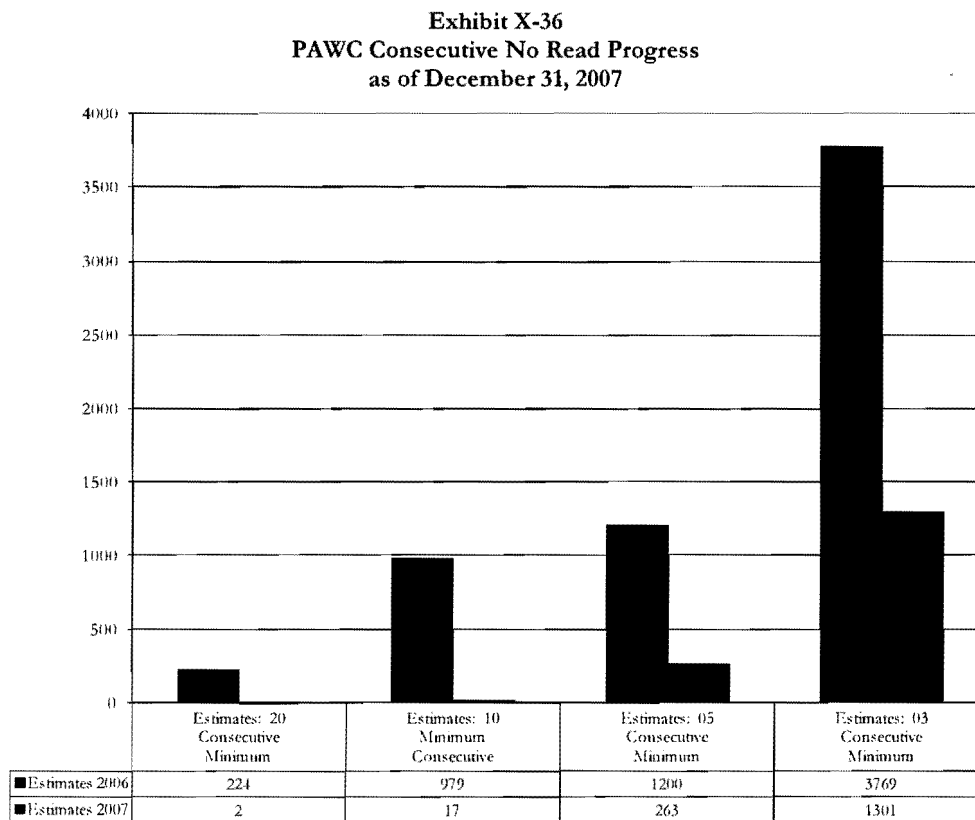
Recommendation X-7 Initiate actions to lower the number of over estimates in meter reading. (Refer to Finding X-14.)

Over estimates in meter reading cause two specific problems:

- ◆ Over estimating is not good for customer relations.
- ◆ Over estimating results in additional costs associated with the billing process due to manual review of the bill and potential dispatches for rereads.

A significant amount of personnel time is spent adjusting these overestimated bills. Thus both the billing area in Alton Call center and field force personnel need to be staffed to a level to handle this workload on an ongoing basis. These costs were estimated in *Finding X-14* to be \$300,000 to \$400,000 annually in additional workload. The high number of over estimates also calls into question the estimating algorithms that are being used for estimating bills.

Schumaker & Company recognizes that, in 2006, PAWC undertook a program to reduce the number of consecutive estimates and achieved the results shown in *Exhibit X-36*.



Source: Information Response 270

Recommendation X-8 Complete the upgrade project for Advantex. (Refer to Finding X-15.)

Advantex was implemented in 2004. It has not been upgraded since that time. In an earlier draft business case (2006 to 2007 timeframe) that Schumaker & Company consultants reviewed, several minor enhancements and their improvements to the system were identified, which would be beneficial to PAWC. It is our understanding that a reconstituted project team has recently been established to revise the previous business case and move forward.

XI. Operational Performance

This chapter addresses four specific performance areas of Pennsylvania-American Water Company (PAWC). These areas include:

- ◆ *Damage Prevention Programs and Practices* – a review of PAWC’s damage prevention programs and practices including program documentation, management reporting, and tracking of third-party line hits and the associated causes; the trend of third-party line hits and damage recovery efforts; trends regarding PAWC and/or its contractors hitting other utilities’ underground facilities; electronic mapping of underground facilities; ratio of line locates to line hits; extent of gentlemen agreements utilized; and the impact of the statewide Verizon fiber to the premise (FTTP) program on PAWC’s underground infrastructure.
- ◆ *Chapter 101 Compliance* – PAWC’s compliance with the Commission’s regulations at 52 Pa. Code §101, including but not limited to filing annual self-certification forms, maintaining updated written physical security, cyber security, business continuity, and emergency response plans, and verifying such plans at the appropriate location throughout PAWC.
- ◆ *Unaccounted-For-Water Programs* – a review to determine if unaccounted-for-water (UFW)/non-revenue water levels on both a statewide and locality basis are managed appropriately. This review should assess PAWC’s UFW calculation methodology, UFW trends, leak detection policies and procedures, leak survey cycles, main replacement program documentation, main replacement and repair activity trends, and internal management reporting to monitor activity.
- ◆ *Capital Investment and Operating Expense Levels* – a review to assess capital investment and operating expense levels that have been budgeted and incurred to properly maintain and operate the PAWC system since the acquisition by RWE in 2003. This process should include a review of staffing levels, maintenance policies and procedures, maintenance activity trend levels pertaining to fire hydrants, distribution street valves, blow-off valves, production facilities, and capital investment trend levels for main replacements.

The results of our investigations into each of these areas are briefly discussed in the following sections.

A. Damage Prevention Programs and Practices

Background & Perspective

Pennsylvania-American Water Company has no written damage prevention policy. In practice, the company is an active participant of the Pennsylvania (PA) One Call System and a PAWC employee sits on PA One Call’s Board of Directors.

PAWC uses its own personnel to locate all facilities in the field. PAWC employees review company records such as distribution maps, tap orders, and as-built plans prior to field locating. These records provide employees with field reference points so that line locating may be performed accurately and efficiently. Once records are reviewed, employees use line-locating equipment to determine exact locations in the field.

PAWC has not maintained third-party hit records in all districts within the past five years. Schumaker & Company consultants did review a spreadsheet that represented five years of data of third-party hits (damages) to PAWC's facilities. A standard Buried Facilities Damage Report was developed and implemented in 2007 for all PAWC districts.

PAWC has recently, in 2007, developed and implemented a standard documentation and tracking system for all third-party hits. A paper form was developed for entering information although a computer application supporting this process has yet to be developed.

Findings & Conclusions

Finding XI-1 PAWC is unable to provide a complete and extensive third-party line-hit damage history for the last five years because of lack of good business processes.

PAWC provided a summary of third-party hits on PAWC facilities for 2002 to 2006. However, PAWC management has indicated that the information may not be complete in that PAWC has not maintained third-party hit records in all districts within the past five years. Nonetheless, the following conclusions could be drawn from the information submitted:

- ◆ Some districts have billed for damages and some have not. In numerous instances, the information shows that the hit was not the fault of PAWC but the offender was not billed for the damages. Either the costs were not identified or no bill was sent.
- ◆ In other cases, it appears that the cause was not determined. As a result, it was not possible to make a determination on whether the offender should be billed.
- ◆ In some cases, it appears that PAWC bills a flat amount for damages, and in other cases, it charges the actual costs.
- ◆ The damages identified, recognizing that not all damages have been accounted for, amounted to approximately \$78,300 for the 2002 to 2006 time period, for which approximately 30% (\$24,900) has been collected. (Some of the damages identified are in litigation or negotiation, thereby delaying reimbursement to PAWC.)

Finding XI-2 PAWC's recently developed third party line hit standardized reporting form has inherent deficiencies and is not integrated with other key business processes or systems to effectively manage this function.

In 2007, PAWC developed a paper form for reporting third-party hits. However, Schumaker & Company consultants would expect that more than just a paper form would have been developed to implement a business process involving third-party hits. A document describing the overall business process needs to be developed that would also describe such things as:

- ◆ Who is responsible for initiating the form?
- ◆ Is the process integrated into a work order system or a separate system?
- ◆ Is there a database for collecting and charging back for damages?
- ◆ Has the process been implemented in each district?
- ◆ Is it an American Water process or just a PAWC one?

It is unclear just how much information will be tracked in the new system. Based on our review of the existing form, the current system is a third-party hit-tracking program. However, it does not appear to be connected to a locate-ticket tracking program. Once a customer calls the PA One Call and each utility impacted is contacted, most utilities issue a locate ticket (a request to perform a facilities locate for a customer). As an assessment of the locate activity's success, many utilities measure the total number of locates performed in a year compared to the total number of locates that resulted in damage. Such information would be one of the first pieces of information that would be expected to be used in determining the effectiveness of the locating process.

The buried damage report does appear to require some coding for the causes of the damages. The form provides the following coding options:

- ◆ Marked
- ◆ Not marked
- ◆ Wrong information provided
- ◆ No one call notification
- ◆ Other

However, other systems with which Schumaker & Company consultants are familiar have the following types of coding to provide a better determination of root causes for damages:

- ◆ Contractor caused
 - No locate request
 - Expired locate ticket
 - Dug early
 - Marked accurately
 - Out of extent
 - Poor work practice

- ◆ Utility caused
 - Failed to mark
 - Mis-marked
 - No-show
 - Inaccurate prints
 - No print
 - Installation practices
 - Shallow facilities
 - Tracer wire

Recommendations

Recommendation XI-1 Develop a comprehensive damage prevention program. (Refer to Finding XI-1 and Finding XI-2.)

The business processes around damage prevention need to be more fully developed in order to successfully implement an adequate damage-prevention program. A document describing the overall business process needs to be developed that would also describe such things as:

- ◆ What system is used to track the number of locates performed?
- ◆ How do you measure the success of the locate process?
- ◆ Who is responsible for initiating the form?
- ◆ Is the process integrated into a work order system or a separate system? What database system is used for tracking the information?
- ◆ How does the information flow to accounts receivable to be billed to the responsible party?
- ◆ Is there a database for collecting and charging back for damages?
- ◆ How is the process to be implemented in each district?
- ◆ Is it an American Water process or just a PAWC one?

From the incomplete information that was provided, PAWC identified approximately \$78,300 in damages for the 2002 to 2006 time period, of which approximately 30% (\$24,900) has been collected. A better damage prevention program could be expected to exceed those amounts and prevent some damage from occurring once third parties recognize that PAWC has such a program in place. It could provide savings (through the collection of costs incurred for repairs) of as much as \$100,000 per year in recovery and prevention, especially in areas where there is a fair amount of construction activity.

B. Chapter 101 Compliance

Background & Perspective

Each year since 2005, PAWC has been required to submit self-certification forms to the Secretary's Bureau at the Pennsylvania Public Utility Commission (PaPUC) regarding its emergency preparedness, as required by 52 Pa. Code §§ 101.1-101.7. Subsequently, concurrent with its PaPUC annual report filing, PAWC submits its self-certification filing, in which it must indicate that the requirements were met for the entire prior year (submitted in early 2006, for example, for 2005).

The regulation requires a jurisdictional utility to develop and maintain written physical- and cyber-security, emergency-response, and business-continuity plans, which include:

- ◆ A physical-security plan must, at a minimum, include specific features of mission-critical equipment or facility-protection programs as well as company procedures to follow based upon changing threat conditions or situations.
- ◆ A cyber-security plan must, at a minimum, include:
 - Critical functions requiring automated processing
 - Appropriate backup for application software and data; appropriate backup may include having a separate, distinct storage media for data or a different physical location for application software
 - Alternative methods for meeting critical functional responsibilities in the absence of information technology capabilities
 - A recognition of the critical time period for each information system before the utility could no longer continue to operate
- ◆ A business-continuity plan must, at a minimum, include:
 - Guidance on the system restoration for emergencies, disasters, and mobilization
 - Establishment of a comprehensive process that addresses business recovery, business resumption, and contingency planning
- ◆ An emergency-response plan must, at a minimum, include:
 - Identification and assessment of the problem
 - Mitigation of the problem in a coordinated, timely, and effective manner
 - Notification of the appropriate emergency services and emergency-preparedness support agencies and organizations

This section discusses the physical security, business-continuity, and emergency-response plans. The disaster-recovery and cyber-security plans were discussed in *Chapter IV – Support Services (Information Technology)*.

Findings & Conclusions

Finding XI-3 The latest Chapter 101 self-certifications indicate that PAWC has met all required elements.

For 2005, PAWC submitted self-certification forms indicating that it essentially met all such requirements, with some emergency-response plans to be reviewed and updated, as appropriate, in early 2006. Then, for 2006 and 2007, PAWC submitted self-certification forms indicating that it met all such requirements.

Finding XI-4 PAWC maintains a physical security plan for each of its operating plant facilities.

Physical security plans are incorporated into each of the water plant facilities' operating manual. All plants visited were observed to have security cameras throughout the facility and all plants maintained a perimeter fencing around the facility. Emergency procedures have been developed and tested as discussed below in Finding XI-6.

Finding XI-5 Business-continuity planning is less complete than our experience with other utilities.

According to PAWC management, business continuity directly involving the customer is typically included as part of the Emergency Response Program and O&M Manuals for each public water system identified (PWSID). Business continuity directly involving the company and its employees, such as strike plans and avian-flu staffing plans, are separately prepared plans. American Water Operational Risk Management personnel meet at least quarterly to discuss industry trends, including business continuity when applicable. At these meetings, and when applicable, personnel are identified to assume various planning roles for the entire company. Follow-up work and deadline dates are established for the work product. In late 2006 and 2007, PAWC conducted tabletop exercises to test business-continuity plans as shown later in *Exhibit XI-1* and *Exhibit XI-2*.

Chapter 101 identifies four specific types of plans, specifically:

- ◆ Physical-security plan
- ◆ Cyber-security plan
- ◆ Business continuity plan
- ◆ Emergency response plan

PAWC management believes that its emergency response plans cover business continuity. However, this is different than what Schumaker & Company have observed at other utilities that have created distinct physical security plans, cyber-security plans, business continuity plans and emergency response plans to conform with Chapter 101 requirements. Other utilities run separate business continuity and emergency response plan exercises on an ongoing basis. Some utilities have gone as far as purchasing commercially off-the-shelf (COTS) software to assist in business-continuity planning and in conducting tabletop exercises on a periodic basis—in several cases more frequently than once a year.

Finding XI-6 Emergency-preparedness planning has been tested via tabletop exercises.

In the fall of 2006, PAWC used an outside consultant to assist in conducting five emergency-response tabletop exercises across PAWC state operations. Each tabletop exercise was five and a half hours in duration. Exercises were conducted at the following locations shown in *Exhibit XI-1*.

Exhibit XI-1
PAWC Emergency Response Exercises
as of December 31, 2006

Date	Location
October 25, 2006	Mechanicsburg, PA
November 1, 2006	New Castle, PA
November 2, 2006	McMurray, PA
November 8, 2006	Wilkes-Barre, PA
November 10, 2006	Norristown, PA

Source: Information Response 716

The exercises consisted of six separate emergency scenarios derived from the Pennsylvania Department of Environmental Protection (DEP) Public Water Supply Manual Part IV Emergency Response. These exercises were designed to:

1. Conduct a thorough test of PAWC's emergency-response plans
2. Check contact lists and communications methods and protocols
3. Assess emergency roles at all levels of the PAWC organization
4. Assess DEP and PaPUC notification decision-making and execution
5. Assess Public Notification formulation and execution
6. Assess functional technical response for a range of emergency situations

As a result of these tabletop exercises, five major recommendations or enhancements were made to improve the emergency-response processes. In addition, approximately 50 other recommendations were made to improve certain aspects of its emergency response. Such suggestions included the capability to remotely shut down certain facilities, the expansion of the contacts to be notified for certain types of emergencies, etc.

These tabletop exercises addressed and tested the three items required by 52 Pa. Code §§ 101.1-101.7, specifically:

- ◆ An emergency-response plan must, at a minimum, include:
 - Identification and assessment of the problem
 - Mitigation of the problem in a coordinated, timely, and effective manner
 - Notification of the appropriate emergency services and emergency-preparedness support agencies and organizations

The company indicated that tabletop exercises were also conducted in 2007 as shown in *Exhibit XI-2*.

Exhibit XI-2
Table Top Exercises Completed in 2007
as of December 31, 2007

Date	Location
September 11, 2007	McMurray, PA
September 12, 2007	New Castle, PA
September 18, 2007	Wilkes-Barre, PA
October 16, 2007	Hershey, PA
October 17, 2007	Norristown, PA

Source: Information Response 889

Schumaker & Company consultants briefly reviewed the emergency-response plans at various water treatment plants that were visited, including Yardley, Norristown, Royersford, and Hershey. In addition, we reviewed the Operations Department intranet website that also contains much of the emergency contact information online. We also identified that many of the plant management and operations personnel have the emergency contact numbers programmed into their cell phones so that the calls can be made without having to look up the number from another source.

Finding XI-7 The systems used for maintaining the operations and maintenance plans for each facility are labor intensive, subject to potential inaccuracies, and not as clearly defined as we have seen elsewhere in the utility industry.

In accordance with the Pennsylvania DEP regulations contained in 25 PA Code §109.702, PAWC maintains updated operations and maintenance (O&M) plans for each of its community water systems. Plans address the following information for each system:

- ◆ A description of the facilities
- ◆ An explanation of startup and normal operation procedures

- ◆ A routine maintenance program
- ◆ Records and reporting system
- ◆ Sampling and analyses program
- ◆ A public notification program including appropriate advance preparations, such as public notice templates, an explanation of appropriate methods of delivery, and a designation of public-notice recipients for each tier type
- ◆ Staffing and training
- ◆ Sanitary survey program including the wellhead protection program for any water system that develops one under §109.713 (relating to wellhead protection programs)
- ◆ Safety program
- ◆ Emergency plan and operating procedures
- ◆ Manufacturer's manuals
- ◆ An interconnection, valve and blow-off exercise and testing program.

Schumaker & Company consultants reviewed the various paper manuals at the plants that were visited, although to characterize these documents as “manuals” requires a broad interpretation of the word manual. These manuals are disparate written documents that have been placed in a three-ring notebook behind the appropriate notebook “tab.” There is no overall table of contents for the whole document aside from the “tabs” (i.e., the table of contents goes down only to level 1). The format of each document is different depending on the author. Although Schumaker & Company recognizes that these manuals have met the PA DEP's satisfaction because they contain the requisite information, they should undergo a “usability” review.

In a similar manner, the intranet website should be reviewed in terms of functionality. During our review of the site, we observed the need to scroll through various documents relating to other sites (water treatment plants) in order to find the appropriate information.

Recommendations

Recommendation XI-2 Improve business-continuity planning. (Refer to Finding XI-4).

For an organization as large as PAWC, business-continuity planning should be upgraded to include written business-continuity plans that are tested via tabletop exercises. In addition, American Water and PAWC should investigate the adoption of COTS software that would assist in identifying the risks, in formulating plans, and in performing the tabletop exercises on a periodic basis.

Recommendation XI-3 **Perform a review and incorporate better technologies for preparing, distributing, and updating the emergency and the operations and maintenance manuals including the intranet site. (Refer to Finding XI-7.)**

There are several items that should be considered by PAWC, including:

- ◆ Standardizing the formatting of all sections to include Word automation capabilities for creating a standardized table of contents and table of exhibits for the individual chapters such that the information could be more readily found
- ◆ Investigating some type of formal document-management system for maintaining the information—possibly something like a Microsoft SharePoint site or other COTS product
- ◆ Possibly re-engineering the Operations intranet site to make the information more readily available—such that if one visits and selects Yardley as the location, then the user will be shown only the Yardley contacts and other information

On another note, it is an interesting observation that much of the information in the emergency plan was updated in the April 2006 timeframe, but the tabletop exercises were not conducted until the October/November 2006 timeframe. This tendency raises a question as to why these exercises are not conducted closer to when the information is changed.

C. Unaccounted-For-Water

Background & Perspective

The reduction of unbilled or non-revenue water (NRW) has become a focus of not only PAWC but also the water utility industry. PAWC is in the process of adopting the water audit methods of the International Water Association (IWA) and the American Water Works Association (AWWA). Water loss is a universal problem requiring a common strategy that considers local economic and infrastructure factors. PAWC is moving to use the new IWA definitions and performance indicators, which will enable the operating systems to be benchmarked and compared with other utilities in this country and the world. This movement began with the development of an Excel spreadsheet-based UFW reporting system in 2005. This plan will incorporate both the state utility commission's unaccounted-for percentage and the new IWA performance indicators in the period reporting. The plan focuses on four areas to reduce water loss:

- ◆ Leak prevention
- ◆ Leak detection
- ◆ Metering programs
- ◆ Accounting for un-metered usages

These four areas build on the current action plan that is already operating at PAWC. The NRW Activity Report (AR) records the best practices in active leak control (ALC) methods being utilized in every district. This report tracks activities such as system survey, right-of-way inspections, stream crossing inspections, un-metered fire services, periodic meter change-outs, service line replacements, small-diameter main replacement, non-revenue use, leakage, etc. The plan adds additional emphasis on leveraging new technology in acoustical leak monitoring and pinpointing, district metering area (DMA), night-flow monitoring, surge, and pressure control implementation for the long-term solutions to water loss.

PAWC engages in active leak control (ALC). ALC includes, but is not limited to, manual leak surveys, automatic leak surveys using acoustic loggers, and inspection of rights-of-ways and stream crossings as well as un-metered fire services for leakage.

The Water Loss Management Plan describes PAWC's water loss program and non-revenue water (NRW) activity tracking and reporting mechanism. PAWC's unaccounted-for-water calculation methodologies are as follows:

- ◆ $\text{UFW (volume)} = \text{System delivery} - \text{metered sales} - \text{non-revenue use}$
- ◆ $\text{UFW (percentage)} = \text{UFW (volume)} / \text{system delivery}$

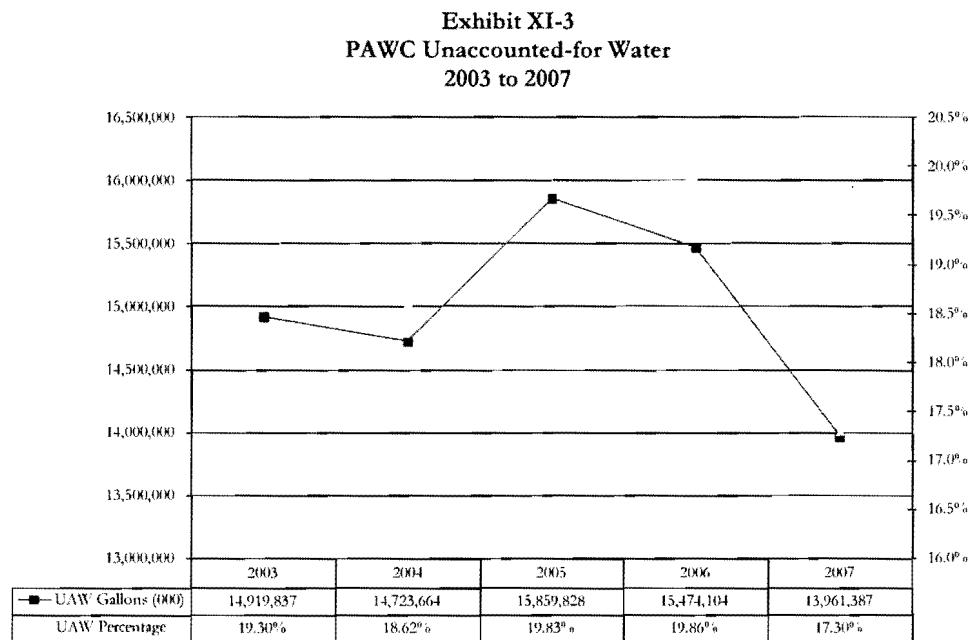
Definitions for these calculation methodologies are:

- ◆ *System delivery* – water volume delivered to the distribution system
- ◆ *Metered sales* – sales volume billed to PAWC customers
- ◆ *Non-revenue use* – water used by PAWC to provide service after delivery to the distribution system; or, authorized/unauthorized usage by others that is not billed:
 - *Company use* – main flushing, blow-off use, PAWC office use, meter shop use, and tank draining
 - *Municipal use* – street cleaning, sewer flushing, and fire use
 - *Unauthorized use* – theft of water
 - *Identified leakage* – leak-loss volume from located and repaired breaks
 - *Unavoidable real losses (UARL)* – leak losses that are uneconomical to reduce; calculated on a company level using an AWWA industry-standard formula

Findings & Conclusions

Finding XI-8 Unaccounted-for-water on a system-wide basis has improved as reported to the PaPUC since 2004; however, individual districts are experiencing high levels of unaccounted-for-water.

Unaccounted-for-water trends over the last five years are shown in *Exhibit XI-3*.



Source: Information Response 128 and 870

PAWC has been successful at reducing unaccounted-for-water in certain areas of its system. Aggressive efforts by PAWC to reduce UFW since the acquisition of the water portion of Pennsylvania Gas and Water Company in 1996 has resulted in a significant reduction of UFW in that system. Prior to 1996, the total of non-revenue water and unaccounted-for-water was at approximately 47% of system delivery. By 2000, it had been reduced to approximately 26.5% of system delivery, which resulted in a decrease in overall system demand. The demand-projections scenario adopted during planning scenarios accounted for a continued decrease in non-revenue water and unaccounted-for-water to 25% by the year 2005 (the actual result was 27.2%), and a further (projected) reduction to 20% by the year 2010. However, no allowance derived from the UARL calculation is included these numbers since UARL is calculated on a total-company basis.

Approximately two-thirds (20 of 31) of the PAWC water districts are showing unfavorable trends or levels (either increasing percentages or percentages above the PaPUC UFW threshold of 20%) in unaccounted-for-water, as shown in *Exhibit XI-4*.

Exhibit XI-4
PAWC Unaccounted-For-Water by Water District
2005 to 2007

Eastern PA	2005	2006	2007	Trend	Three Year Trends/ Levels
Abington	17.90%	12.17%	14.94%	-2.96%	Favorable
Bangor	16.42%	14.50%	16.60%	-1.17%	Unfavorable
Berwick	15.28%	18.51%	21.73%	-3.45%	Unfavorable
Blue Mtn	4.11%	1.22%	8.74%	-6.33%	Unfavorable
Coatesville	23.42%	23.03%	29.11%	-6.70%	Unfavorable
Frackville	19.13%	17.66%	22.02%	-2.90%	Unfavorable
Glen Alsace	67.64%	12.07%	12.70%	55.57%	Favorable
Hershey	3.42%	13.44%	19.71%	-9.29%	Unfavorable
Lake Heritage	3.03%	0.93%	0.56%	2.47%	Favorable
Lehman Pike	62.58%	43.62%	22.15%	19.43%	Favorable
Mechanicsburg	37.61%	39.21%	25.09%	-2.52%	Favorable
Milton	7.36%	9.48%	7.70%	-3.34%	Unfavorable
Norristown	15.85%	24.45%	20.05%	-2.20%	Unfavorable
Penn Water	-11.17%	20.86%	21.44%	-1.58%	Unfavorable
Philipsburg	35.20%	38.47%	34.55%	-1.65%	Favorable
Pocono	12.79%	21.16%	31.40%	-9.21%	Unfavorable
Royersford	13.84%	2.66%	13.91%	-10.07%	Unfavorable
Susquehanna	36.20%	30.29%	40.79%	-6.50%	Unfavorable
Wilkes Barre	27.21%	28.37%	27.33%	-1.12%	Unfavorable
Yardley	17.41%	12.76%	15.44%	-2.97%	Favorable
Eastern PA Total	23.18%	24.53%	23.22%	-1.05%	Unfavorable
Western PA	2005	2006	2007	Trend	Three Year Trends/ Levels
Brownsville	19.35%	12.81%	11.27%	-6.09%	Favorable
Butler	25.22%	24.43%	22.53%	-1.68%	Favorable
Clarion	29.15%	24.78%	30.39%	-5.61%	Unfavorable
Indiana	15.20%	16.81%	14.39%	-2.41%	Favorable
Kane	19.14%	23.90%	22.99%	-0.91%	Unfavorable
Kittanning	16.53%	-6.28%	24.87%	31.15%	Unfavorable
New Castle	21.84%	17.89%	28.40%	-10.51%	Unfavorable
Pittsburgh	37.87%	37.11%	33.31%	-3.55%	Favorable
Punxsutawney	29.53%	33.82%	33.02%	-0.80%	Unfavorable
Uniontown	13.96%	6.80%	6.72%	7.14%	Favorable
Warren	-1.03%	11.27%	-44.61%	56.91%	Favorable
Western PA Total	33.05%	31.86%	28.99%	-4.06%	Favorable
PA	27.99%	28.06%	25.96%	-2.03%	Favorable
					Favorable
					13
					Unfavorable
					19

Source: Information Request 873

Schumaker & Company consultants recognize that a rigorous unaccounted-for-water reporting process has only been in place for the last four years (as discussed in *Finding XI-9* and *Finding XI-10*). As shown

in *Exhibit XI-4*, some of the numbers would also appear to indicate that there are some reporting issues to be corrected in the reporting (negative or extremely low numbers in some cases).

It is our understanding that PAWC does not calculate the allowance for unavoidable real losses, discussed in *Finding XI-11*, in reporting UFW on a district basis. Therefore these numbers are higher.

Finding XI-9 PAWC has developed a fairly extensive spreadsheet for reporting and monitoring non-revenue water and unaccounted-for water.

Since 2005, PAWC has been working on a program to place more emphasis on non-revenue water and/or unaccounted-for water. An extensive set of linked spreadsheets has been developed for reporting and tracking NRW and UFW. Templates are provided for each water district to account for identified leakage on a monthly basis. The information is being collected and reported on a water-district-by-water-district basis throughout PAWC. Monthly and/or quarterly meetings (based on the size of the water district) are held with water district management to review results. In addition, efforts have been made to attempt to collect additional information —such as number of leak surveys performed.

Finding XI-10 The linked Excel spreadsheets are a good prototype for building an improved NRW and UFW reporting and monitoring program, but the database platform would be a better technology upon which to build the tool.

Since 2005, PAWC has been developing and using a non-revenue-water reporting process that records the information to calculate non-revenue water on a water-district basis (35 different water districts). Various pieces of information are collected and entered into these spreadsheets on a monthly basis and non-revenue water calculations are performed. Individual spreadsheets are located on a specific file-share and users locate that specific file-share and that water district's file to input the appropriate data. Other spreadsheets have been developed to link all of this information together and to provide summary information from the individual water district's information. Depending on the size of the water district, monthly or quarterly meetings are held with district management to discuss this information and to identify any corrective action that might be required.

Although the Excel spreadsheets have served as a good prototype for developing the non-revenue water business processes within PAWC, as the business practice is implemented, by using these linked spreadsheets, it will, in our opinion, become difficult to maintain them. PAWC would, therefore, be better served by the development of a database technology. Many of the business rules have already been identified in the Excel spreadsheets, and it would simply be a matter of converting these business rules to a database structure.

Finding XI-11 PAWC has implemented an allowance for unavoidable real losses using an AWWA methodology (still under development) in reporting its unaccounted-for-water numbers to the PaPUC on an annual basis.

Although PAWC does not calculate an allowance for UARL on an individual water-district basis, PAWC does include a calculation for UARL in its annual reporting to the PaPUC. *Exhibit XI-5* shows the information that is being reported to the PaPUC by PAWC for the year 2006. Line 29 shows the calculated Unavoidable Leakage 2,085 gpd/mile of main as 6,913,100 thousand gallons. The percentage of unaccounted-for water that would have been reported without this calculation would have been 28.6% (versus 19.8%). Line 29 Unavoidable Leakage reduces the reported unaccounted-for water by 8.8%. Without that estimate of leakage being considered “accounted-for-water,” the numbers being reported would be 44% higher, significantly higher than the 20% benchmark considered reasonable by PaPUC regulations. The Commission’s regulations at 52 Pa. Code 65.20 (4) states that the Commission has considered UFW levels to be excessive when they exceed 20%. Furthermore, unavoidable leakage was not considered at the time this Commission regulation was established.

The Unavoidable Leakage amount comes from the AWWA’s Water Loss Control Committee (WLCC) water-audit software that is used for determining water-loss standing. That software is used to calculate an infrastructure leakage index (ILI) that can be used to compare water systems’ operations among systems with significantly different dynamics, etc. The lower the amount of leakage and real losses that exist in the system, the lower the ILI value will be. The AWWA’s WLCC provided a table to assist water utilities in gauging an approximate ILI that is appropriate for their water system. PAWC’s ILI was 3.64 for 2006. The ILI for 2007 has not yet been finalized.

Exhibit XI-5
PAWC Unaccounted-for Water Reported to PaPUC
as of December 31, 2006

Pennsylvania American Water For the Year Ended December 31, 2006
(Company Name)

500. WATER DELIVERED INTO SYSTEM DURING YEAR

Every estimated value shall be supported by such detailed information as will permit a ready identification, analysis, & verification of all relevant facts. The Company shall be prepared to furnish to the Commission this detailed information.

Line No.	Description (a)	(Gallons) (000 omitted) (b)	(gpd) (c)
1	Water Delivered for Distribution & Sale:		
2	Water Obtained from Company Sources	78,322,565	214,582
3	Water Obtained from Other Independent Utilities		
4	Total Water Delivered	78,322,565	214,582
5	Metered Sales:		
6	Residential	29,949,297	82,053
7	Commercial	12,856,120	35,222
8	Industrial	4,965,426	13,604
9	Public	2,624,389	7,190
10	Other Water Utilities	713,339	1,954
11	Private Fire Protection		
12	Public Fire Protection		
13	Other Metered Sales <i>Identify</i>		
14	Total Metered Sales	51,108,571	140,023
15	Unmetered Sales:		
16	Residential		
17	Commercial		
18	Industrial		
19	Private Fire Protection		
20	Public Fire Protection		
21	Other Unmetered Sales <i>Identify</i>		
21	Total Unmetered Sales		
22	Total Sales	51,108,571	140,023
23	Non-Revenue Usage Allowances:		
24	Authorized Unmetered Usage:		
25	Main Flushing	372,897	1,022
26	Blow-off Use	402,760	1,103
27	Others: See Attachment below	719,287	1,971
28	Unauthorized Use	74,957	205
29	Unavoidable Leakage 2,958 gpd/mile of main	6,913,100	18,940
30	Adjustments:		
31	Located & Repaired Breaks in Mains & Services	3,221,558	8,826
32	Others <i>Identify</i> Unaccounted for and non-revenue usage		
33	Total Allowances & Adjustments	11,704,559	32,067
34	Unaccounted-for-Water and total non-revenue usage	15,509,435	22,422,535
35	Percentage Unaccounted-for-Water	19.8%	28.6%

Page 56

△ 8.8%

Source: Information Request 867

An analysis of PAWC unaccounted-for water reported to the PaPUC for the years 2005-2007 is shown in *Exhibit XI-6*. The Unavoidable Leakage (UL) component accounts for approximately 30% (as shown on the bottom line of *Exhibit XI-6*) of the accounted for water w/o UL—lowering the UFW by 8.6 to 8.8 percentage points. Without this calculation, PAWC would be reporting UFW in the 27% to 28% range on a system wide basis.

Exhibit XI-6
Analysis of PAWC Reported Unaccounted-For Water
2005 to 2007

Description	2005		2006		2007	
	Gallons	Percent	Gallons	Percent	Gallons	Percent
Total Water Delivered	79,784,608		78,322,565		80614732	
Total Sales	52,520,704		51,108,571		52080900	
NonRevenue Water	27,263,904	34.2%	27,213,994	34.7%	28533832	35.4%
Non-Revenue Usage Allowances (no UL)	5,227,610		4,791,459		7520462	
Unaccounted For Water w/o UL	22,036,294	27.6%	22,422,535	28.6%	21013370	26.1%
Unavoidable Leakage 2,058 gpd/mile of main	6,901,000		6,913,100		7051983	
Unaccounted For Water with UL	15,135,294	19.0%	15,509,435	19.8%	13961387	17.3%
Percentage Difference		8.6%		8.8%		8.7%
Percentage of Unavoidable Leakage portion of UFW to total UFW		31.3%		30.8%		33.6%

Source: Information Response 867

Other concerns in the use of this calculation is that PAWC has based its calculation on an assumption that their average system pressure is 100 psi (233 feet of water) and that new mains and service connections are equally weighted with infrastructure approaching the end of its useful life. *Exhibit XI-7* provides the calculation used for 2007. As shown in *Exhibit XI-7*, the 2,056 gpd/mile is based on a 100 psi operating pressure. Both the 2005 and 2006 numbers that were reported to the PaPUC were also based on this operating pressure. Both the 2005 and 2006 numbers reported to the PAPUC were based on 9,189 miles of main and 699,211 service connections. In 2007, the miles of main was increased to 9,399 miles of main, an increase of 210 miles in one year, and 714,217 service connections. In essence, as new main and new service connections are added to the system, PAWC is taking credit for Unavoidable Annual Real Leakage at the same rate as the old mains and service connections. New connections and mains should in no way leak as much as old facilities unless they are improperly installed.

In Schumaker & Company's opinion, the use of this calculation on a system-wide basis is questionable, serving little more than to reduce reported UFW and obscuring the real UFW numbers.

Schumaker & Company consultants are also aware of another utility (United Water) that has used this approach on a district by district basis that resulted in the reporting of negative unaccounted-for-water results, which is theoretically impossible without groundwater seepage into the mains. The application of a formula that yields impossible results raises serious questions regarding the use of the formula in the first place.

In response to the task report, PAWC provided their justification for the use of the UARL calculation by referring to a 1986 Preliminary Report presentation made to the National Association of Regulatory Commissioners Committee on Water by members of the Pennsylvania Public Utility Commission. This paper presents two different methods for calculating UFW based on the nature of the water system. Whether this paper constitutes the adoption of the UARL calculation by the Pennsylvania Public Utility

Commission was not possible for Schumaker & Company to determine in that we could find no specific orders to that effect.

Exhibit XI-7
PAWC Unaccounted For Real Losses Calculation
as of December 31, 2007

$$\text{UURL} = (5.38 * \text{Lm} + 0.15 * \text{Nc} + 7.5 * \text{Lp}) * P \quad (\text{source: Losses in Water Distribution Networks, IWA Publishing, London, UK, 2003.})$$

where:

UURL = Unavoidable Annual Real Leakage (gallons/day)

Lm = length of mains, miles

Nc = number of service connections (including all active and inactive premises)

Lp = total length of service lines, miles

P = average pressure, psi

PA system data:

Lm = 9,399 miles

(source: Ed Mack Spreadsheet received on 3/31/08)

Nc = 714,217 connections

(source: Orcom query, 3/31/08, Cheryl DiSanti)

Calculate Lp:

Assume average length of service line is 35 feet.

$Lp = 714,217 \text{ connections} * 35 \text{ feet/connection} * \text{mile}/5280 \text{ feet}$

$Lp = 4,734 \text{ miles}$

Calculate UURL as a function of P:

$$\text{UURL} = (5.38 * 9399 + 0.15 * 714217 + 7.5 * 4734) * P$$

$$\text{UURL} = 193205 * P$$

P (psi)	UURL (gpd)	UURL (thous gallon/year)	UURL (mill gallon/year)
50	9,660,250	3,525,991	3,526
60	11,592,300	4,231,190	4,231
70	13,524,350	4,936,388	4,936
80	15,456,400	5,641,586	5,642
90	17,388,450	6,346,784	6,347
100	19,320,500	7,051,983	7,052

$$\text{Unavoidable Leakage} = 19320500/9399 = 2056 \text{ gpd/mile of main}$$

Source: Information Response 867

Finding XI-12 **PAWC was unable to provide an engineering justification for the 100 psi pressure used in its calculation at this time.**

According to PAWC, the 100 psi average system pressure is the most accurate estimate that PAWC could develop given the limited information available incorporating system terrain and known pressures across its operations. PAWC is looking at refining this number with a more detailed analysis. Average pressures by water system are not known.

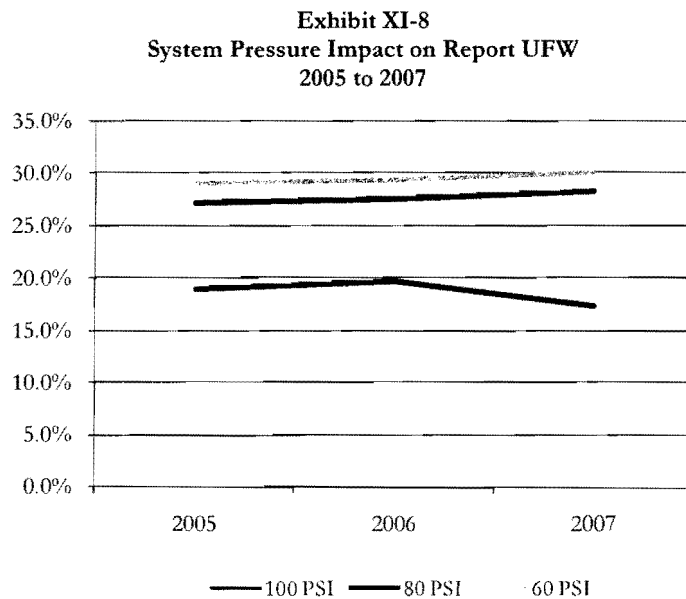
In response to the task report, PAWC provided its justification for the use of the UURL calculation by referring to a 1986 Preliminary Report presentation made to the National Association of Regulatory Commissioners Committee on Water by members of the Pennsylvania Public Utility Commission. In that report on page 2, it indicates that:

Policy on Unaccounted for Water

With the adoption of a Commission order in 1981 at R-79050616, jurisdictional water companies have been duly notified that unaccounted-for water claims in excess of 20 percent must be clearly substantiated. The Commission order states, in part:

In the future, water companies with experienced unaccounted for water of more than 20 % should be prepared to demonstrate by way of substantial evidence that their experience is both normal and reasonable. Such evidence may be a combination of engineering, operations, or historical testimony and data, but it should consist of something more than unsupported or conclusory opinions by company witnesses (R-79050616, page 2)

The number reported for unaccounted for water by PAWC would vary significantly based on the average system pressure as shown in *Exhibit XI-8*.



Source: Information Response 867

What could be concluded from *Exhibit XI-8* is that any pressure much less than 100 psi would result in PAWC reporting UFW higher than 20%.

Finding XI-13 **PAWC is in the process of metering water usage within various parts of a water district as another indicator of possible leakage.**

In both Western PA and Eastern PA, the finished water deliveries from all water treatment plants are metered. In addition, almost all of the booster pump stations and the pressure-reducing valve stations in each district are metered as well. Because many of these metered booster-pump stations and pressure-reducing valve stations are also tied into SCADA systems, PAWC is able to track daily

consumption in discreet areas as well as monitor night flows. These capabilities allow PAWC to detect flow increases that may be indicative of a leak problem.

In the two largest districts, Pittsburgh and Wilkes-Barre, PAWC actively manages DMAs.

In the Pittsburgh District, PAWC monitors the North Low Meter Zone and the North Meter Zone as listed on page 2-6 in the September 2006 Gannett Fleming Report.

In the Wilkes-Barre system, PAWC monitors 17 DMA areas as listed in *Exhibit XI-9*.

Exhibit XI-9
PAWC Wilkes-Barre District Metering Areas
as of December 31, 2007

DMA No.	Location
1A	#4 Hill, Carbondale
1B	Jefferson St., Simpson
2A	Gordon Ave., Carb. Twp.
9C	#5 Hill, Archbald
12B	Lillibridge, Peckville
12E	Scott & Dimmick, Dickson City
19A	Owen St., Swoyersville
29A	Glen Lyon, Newport Twp.
30	Alden Pump, Newport Twp.
33A	Avondale Hill, Plymouth Twp.
36A	8 TH St., W. Wyoming
37C	Sather Dr., Pittston Twp.
80A	Sutton Rd., Trucksville
81	Hillcrest Pump, Shavertown
82	Trucksville, Suction Side of Tank
82A	Rice St., Trucksville
83	Homesite, Dallas

Source: Information response 719

Recommendations

Recommendation XI-4 Continue to strengthen the unaccounted-for-water program. (Refer to Finding XI-8)

PAWC unaccounted-for water has continued to increase especially in Western PA. Schumaker & Company consultants recognize that PAWC has made some significant changes in its UFW program over the last several years but still question if PAWC is appropriately applying the correct resources in the correct places to lower UFW numbers. Several findings were also made in *Chapter V – Water Operations* that bring to question PAWC’s allocation of capital and maintenance dollars to this issue, specifically:

- | | |
|--------------|---|
| Finding V-5 | The number of reported leaks/breaks by water district indicates that certain water districts are up to 10 times worse than others |
| Finding V-6 | Maintenance and capital budgets do not appear to consistently take an analysis of leak/break historical data into consideration shown in <i>Finding V-5</i> |
| Finding V-10 | With the most recent budgeting process (2008 Budget Year), the Engineering Department has implemented a more analytical main replacement decision-making methodology. |

Recommendation XI-5 Incorporate the methodologies in the currently evolving UFW spreadsheets into a more appropriate technology, specifically a backend database with a client server or web interface. (Refer to Finding XI-10.)

PAWC personnel recognize that the Excel spreadsheets are only an interim step in developing a UFW reporting system based on a database technology. Schumaker & Company consultants looked at the interfaces that such a system would have with other systems, such as a leak-tracking database, in the *Chapter XII -Phase III Water Operations* investigations.

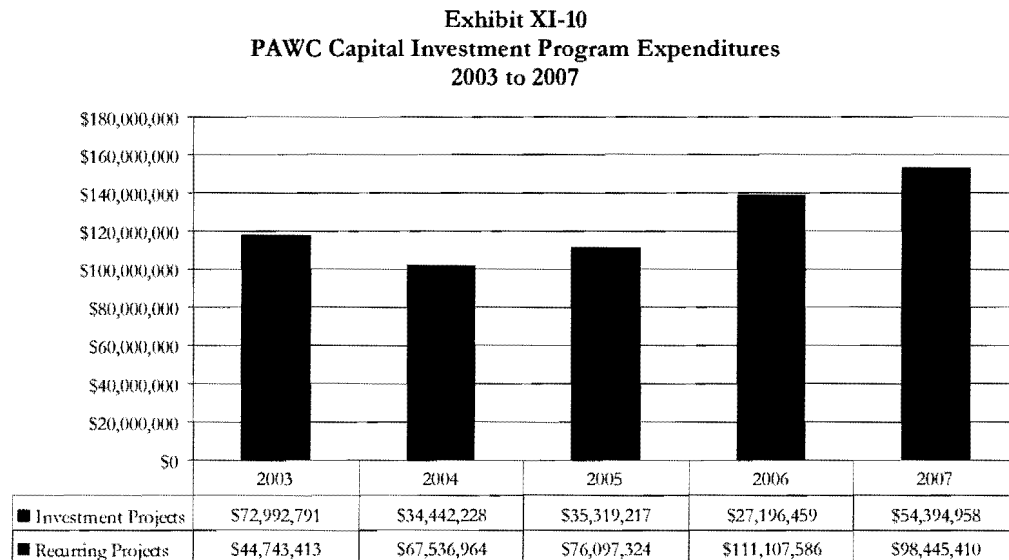
Recommendation XI-6 Refine the reporting of unaccounted-for water to the PaPUC. (Refer to Finding XI-11 and Finding XI-12.)

Whether PAWC is in compliance with its reporting of UFW is for the Commission to determine. However, what is clear is that without the UARL calculation, PAWC would be reporting UFW levels that significantly exceed 20% for the last three years. Furthermore, the UARL calculation is based on an assumed pressure of 100 psi, which PAWC claims is the most accurate number available at this time, although they are looking at refining this number with more detailed analysis. We also question the use of the AWWA’s water audit software to calculate an unavoidable real losses number for incorporation into the unaccounted-for water that is reported to the PaPUC. Because the ILI calculation is being performed by PAWC, the ILI should also be provided to the PaPUC and comparisons should be provided to other water systems, which is our understanding of the ILI’s intent.

D. Capital Investment and Operating Expense Levels

Background & Perspective

Capital investment program expenditures for the last five years are shown in *Exhibit XI-10*.



Source: Information Response 252

The investment amounts include all company expenditures, including routine acquisitions and related improvements. Excluded from the numbers are the Citizens, Coatesville, and Lehman Pike acquisitions, as well as developer-funded projects.

- ◆ Recurring projects are a program or group of similar projects, all of a routine and recurring nature such as main replacement and new services installations
- ◆ Investment projects are unique, individual projects generally with a total value that is greater than \$100,000.

The miles of main replacement for the last five years are shown in *Exhibit XI-11*.

Exhibit XI-11
PAWC Miles of Main Replacement by Water District
2003 to 2007

District No.	District	Miles of Main	Feet of Main	2004	2005	2006	2007	Four Year Average Replacement Rates
2474	Frackville	27	142,560	2,290	1,385	2,843	1,950	1.48%
2423	Uniontown/Connellsville	224	1,182,720	7,083	8,597	40,601	9,960	1.40%
2454	Susquehanna	61	322,080	5,864	4,217	3,600	3,820	1.36%
2425	Brownsville	101	533,280	1,698	3,800	14,675	8,455	1.34%
2463	Wyomissing	153	807,840	5,136	19,390	13,326	1,500	1.22%
2446	Kane	47	248,160	1,368	650	5,504	3,456	1.11%
2411	Pittsburgh	1373	7,249,440	47,817	65,296	78,891	96,006	0.99%
2455	Bangor	61	322,080	6,830	1,715	2,747	300	0.90%
2441	Indiana	111	586,080	2,272	3,640	10,834	4,015	0.89%
2422	Mon-Valley	427	2,254,560	10,341	16,220	31,550	21,695	0.88%
2468	Lehman Pike	90	475,200	0	5,406	5,200	5,160	0.83%
2452	Yardley	183	966,240	4,096	5,517	8,034	11,400	0.75%
2443	Clarion	124	654,720	13,525	2,103	2,224	1,590	0.74%
2491	Scranton/Wilkes-Barre	1925	10,164,000	63,489	52,297	82,013	95,400	0.72%
2453	Abington	105	554,400	3,929	4,545	4,287	2,455	0.69%
2459	Glen Alsace	130	686,400	0	0	12,352	6,165	0.67%
2457	Pocono	161	850,080	4,000	4,350	4,000	8,225	0.61%
2472	Philipsburg	262	1,383,360	8,812	4,900	11,451	8,300	0.60%
2431	New Castle/Ellwood	443	2,339,040	14,667	14,814	13,411	9,360	0.56%
2445	Warren	91	480,480	2,522	2,124	3,979	1,514	0.53%
2442	Punxsutawney	85	448,800	2,064	1,470	2,152	3,455	0.51%
2473	Berwick	84	443,520	3,109	0	2,156	3,750	0.51%
2471	Milton	227	1,198,560	4,900	5,908	7,618	4,640	0.48%
2421	McMurray	1099	5,802,720	14,775	24,510	33,829	36,090	0.47%
2465	Coatsville	174	918,720	0	3,085	7,050	7,040	0.47%
2451	Norristown	376	1,985,280	9,118	5,766	6,522	9,148	0.38%
2433	Butler	270	1,425,600	4,746	4,931	5,715	5,000	0.36%
2462	Hershey/Palmyra	299	1,578,720	5,147	244	9,508	7,600	0.36%
2456	Nazareth	151	797,280	2,062	4,466	2,795	1,100	0.33%
2461	Mechanicsburg	478	2,523,840	4,223	11,627	6,832	8,526	0.31%
2464	Royersford	222	1,172,160	3,645	2,710	4,750	2,100	0.28%
2444	Kittanning	25	132,000	0	550	0	500	0.20%
2466	Lake Heritage	12	63,360	0	0	0	0	0.00%
	Total System		50,693,280	259,528	286,233	440,449	389,675	0.68%

Source: Information Response 869

Findings & Conclusions

Finding XI-14 The collection of complete operating statistical data on production and network operations is complicated by a lack of standard data-collection and reporting systems.

During the course of our review, Schumaker & Company consultants experienced some difficulty in collecting certain statistics data by the various water districts. Much of this difficulty was due to the fact that the individual water districts have historically operated independently with American Water (or PAWC) and have done little to standardize business practices, processes, and systems. Therefore, without some common system for collecting and reporting such activities as the following, it was difficult to obtain such information:

- ◆ Hydrant and main flushings
- ◆ Valve operation
- ◆ Facility damage
- ◆ Other activities

Part of the problem is that some PAWC employees still view the water districts as separate entities that are charged with running their districts, with little standardization from AWWC or PAWC. One of the comments we frequently hear was that PAWC could not force the water districts to adopt standard business practices if they already had their own.

This approach is totally opposite to what Schumaker & Company consultants have seen in other mergers and acquisitions within the utility industry. In most cases, the combined organizations assemble project teams to develop that ONE (usually considered to be the BEST process) approved business process that all entities are required to adopt.

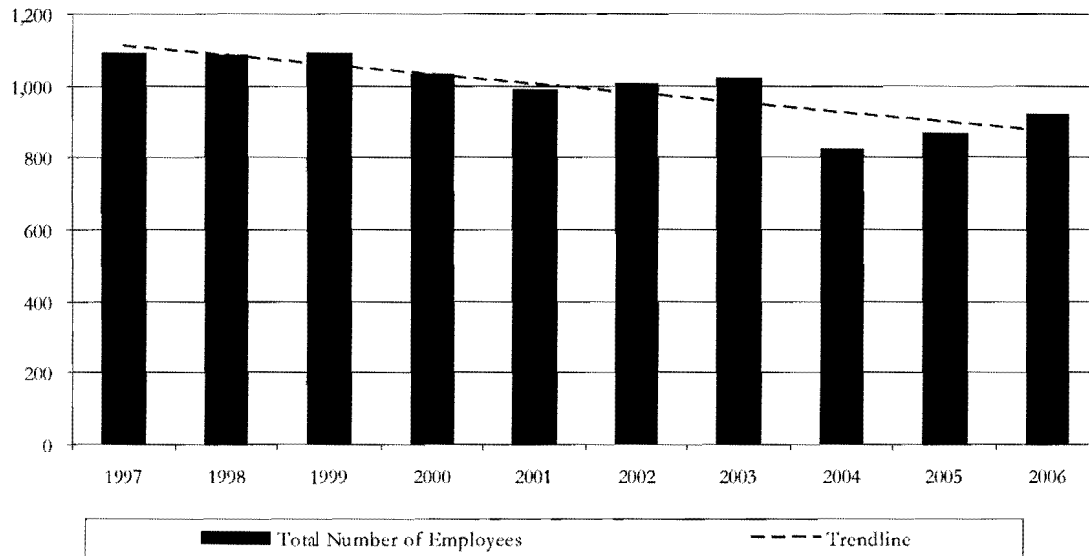
Schumaker & Company consultants perceive that this viewpoint is being changed and that more standard operating practices (including monitoring and reporting systems) are currently in the process of being developed and implemented across PAWC and American Water. As a result, this tendency should become less of an issue in coming years.

Finding XI-15 Production field force staffing levels appear to be inadequate as overtime hours are increasing.

Schumaker & Company's request for field force staffing levels from 2003 to 2007 was referred to the affirmative action plan. Because that information was not useful, Schumaker & Company reviewed the total number of employees reported to the PaPUC as shown in *Exhibit XI-12* and also included in *Appendix A – Data and Statistics*. The bulk of the employees shown in *Exhibit XI-12* would be considered field personnel. When American Water was acquired by RWE, PAWC management staffing

levels were reduced by approximately 39 personnel, as discussed in *Chapter VII - Corporate Culture, Management Structure, and Staffing Levels*.

Exhibit XI-12
PAWC Total Number of Employees
1998 to 2007



Source: PaPUC Reports

Schumaker & Company consultants obtained the overtime hours that were reported in each of the water districts over the last three years. Those figures are shown in *Exhibit XI-13* and *Exhibit XI-14*.

Exhibit XI-13 provides the overtime hours reported in the Network (distribution) Department and *Exhibit XI-14* provides the hours reported in the Production Department. With respect to the Network Department, overtime has decreased overall by 10.8%, with western PA decreasing 17.4% and eastern PA increasing 2.9%. However, overtime in the Production Department has increased by 29.4%, with the biggest increase being in eastern PA.

Exhibit XI-13
PAWC Distribution Overtime Hours
2005 to 2007

OPEX	DISTRICT	2005	2006	2007	Percentage Change
PITTSBURGH	110	23,503	17,683	18,857	-19.8%
MCMURRAY	210	7,929	4,795	5,961	-24.8%
MON VALLEY	220	2,761	3,531	1,315	-52.4%
CONNELLSVILLE	230C	997	788	607	-39.1%
UNIONTOWN	230U	0	0	0	0.0%
BROWNSVILLE	250	303	265	553	82.5%
NEW CASTLE	310N	3,142	2,930	3,714	18.2%
ELLWOOD	310E	0	0	0	0.0%
BUTLER	330	3,034	2,320	2,913	-4.0%
INDIANA	410	381	149	476	24.9%
PUNXSUTAWNEY	420	126	147	232	84.1%
CLARION	430	470	229	236	-49.8%
KITTANNING	440	194	183	381	96.1%
WARREN	450	51	202	182	256.9%
KANE	460	47	16	33	-30.9%
WPA	TOTALS	42,936	33,235	35,458	-17.4%
NORRISTOWN	510	2,095	1,633	1,877	-10.4%
YARDLEY	520	386	111	159	-58.9%
ABINGTON	530	403	201	341	-15.4%
SUSQUEHANNA	540	804	1,465	692	-13.9%
BANGOR	550	303	335	294	-3.0%
HICKORY	555	0	0	0	0.0%
SILVER	556	0	21	0	0.0%
BLUE MOUNTAIN	560	363	522	642	76.7%
POCONO	570	276	470	670	142.8%
POCONO WASTE WTR	580	0	64	0	0.0%
GLEN ALSACE	590	46	278	288	531.9%
MECHANICSBURG	610	1,177	1,289	924	-21.5%
HERSHEY	620	163	419	489	200.2%
WYOMISSING	630	538	547	518	-3.7%
ROYERSFORD	640	127	65	184	45.1%
COATESVILLE	650	475	895	993	109.2%
LAKE HERITAGE	660	0	1	0	0.0%
COATESVILLE WW	670	0	412	13	0.0%
LEHMAN PIKE	680	284	675	717	152.3%
LEHMAN PIKE WW			18	52	0.0%
MILTON	710	433	590	398	-8.2%
PHILIPSBURG	720	198	122	197	-0.5%
BERWICK	730	166	196	121	-27.1%
FRACKVILLE	740	124	75	112	-9.7%
MECHANICSBURG CS	870	0	0	0	
WILKES-BARRE	910	12,863	9,927	12,123	-5.8%
EPA	TOTALS	21,221	20,326	21,800	2.7%
PA	TOTALS	64,157	53,561	57,258	-10.8%

Source: Information Response 713

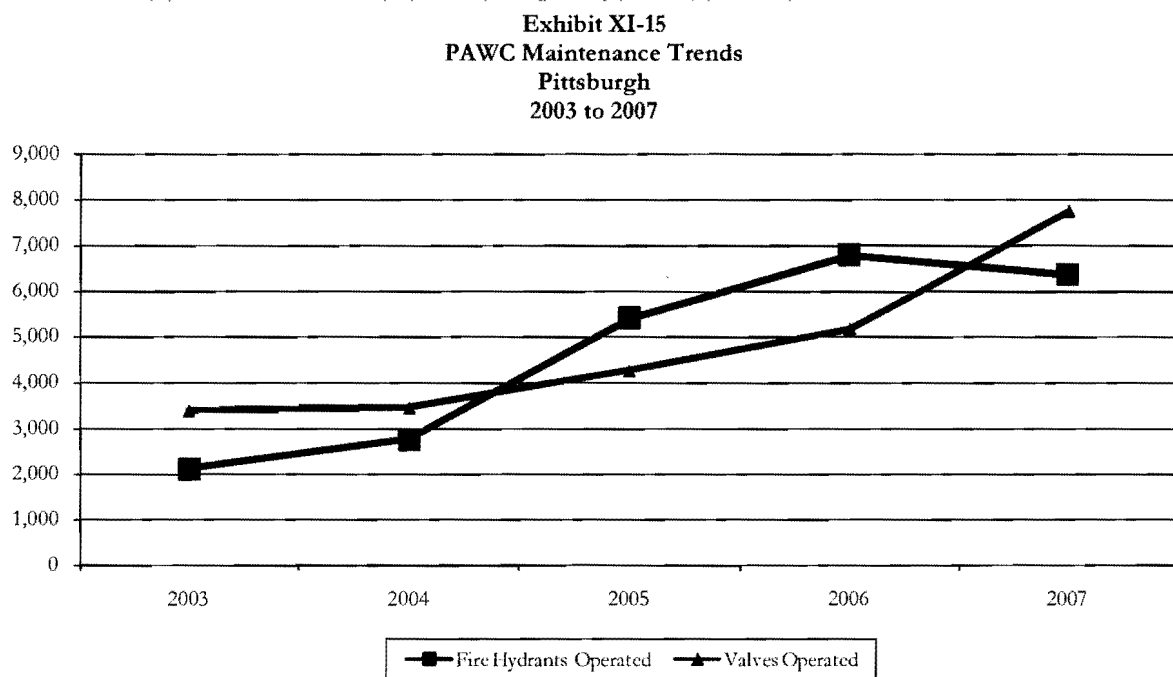
Exhibit XI-14
Production Overtime Hours
2005 to 2007

Water District	2005	2006	2007	Percentage Change
PITTSBURGH	4,935	5,007	3,697	-25.1%
MCMURRAY	105	61	124	18.7%
MON VALLEY	0	0	0	0.0%
CONNELLSVILLE	0	18	4	0.0%
UNIONTOWN	0	0	0	0.0%
BROWNSVILLE	10	62	180	1794.7%
NEW CASTLE	1,086	1,292	927	-14.6%
ELLWOOD	0	54	892	0.0%
BUTLER	664	560	654	-1.5%
INDIANA	150	544	682	356.2%
PUNXSUTAWNEY	109	136	424	287.9%
CLARION	895	316	291	-67.5%
KITTANNING	0	51	0	0.0%
WARREN	9	22	82	811.1%
KANE	96	111	46	-52.6%
WPA	8,058	8,233	8,002	-0.7%
NORRISTOWN	1,138	1,855	1,862	63.6%
YARDLEY	546	1,098	772	41.3%
ABINGTON	0	64	25	0.0%
SUSQUEHANNA	537	846	626	16.5%
BANGOR	199	345	279	40.3%
HICKORY	0	0	0	0.0%
SILVER	0	0	0	0.0%
BLUE MOUNTAIN	207	364	512	147.1%
POCONO	0	43	52	0.0%
POCONO WASTE WTR	0	281	340	0.0%
GLEN ALSACE	0	40	118	0.0%
MECHANICSBURG	962	1,462	561	-41.7%
HERSHEY	30	179	196	553.3%
WYOMISSING	0	0	141	0.0%
ROYERSFORD	0	605	865	0.0%
COATESVILLE	734	955	862	17.4%
LAKE HERITAGE	0	0	0	0.0%
COATESVILLE WW	0	155	521	0.0%
LEHMAN PIKE	350	530	302	-13.9%
LEHMAN PIKE WW			115	0.0%
MILTON	480	235	179	-62.7%
PHILIPSBURG	417	411	430	3.1%
BERWICK	50	66	26	-48.0%
FRACKVILLE	6	51	67	1008.3%
MECHANICSBURG CS	0	0	0	0.0%
WILKES-BARRE	3,290	5,079	5,149	56.5%
EPA	8,944	14,773	13,995	56.5%
PA	17,002	23,006	21,997	29.4%

Source: Information Response 713

Finding XI-16 Valve operations and maintenance programs are not completely implemented across the PAWC distribution network.

PAWC does not track maintenance trends for fire hydrants, distribution street valves, and blow-off valves. However, in its Pittsburgh District, PAWC is required by the Allegheny County Health Department to annually report the number of fire hydrants operated and flushed as well as the number of distribution street valves that are operated. The results for 2003 through 2007 (year to date) are shown in *Exhibit XI-15*. There are approximately 6,352 fire hydrants and approximately 16,800 distribution street valves in the Pittsburgh District. PAWC does not track blow-off valve operation separately from distribution street valve operation.



Source: Information Response 254 and 872

A program for Valve Operation, Inspection, and Maintenance Practice was adopted by American Water on November 21, 2007. This practice is currently limited to the following:

- ◆ Valve Inspection Procedure
- ◆ Valve Inspection Data List/Valve Attribute Data List
- ◆ Frequency Table for Valve Inspection and Locating

This practice was designed to support the implementation of the Computerized Maintenance Management System (CMMS). It therefore includes a significant data collection activity in support of CMMS. Valves are assigned high, medium, and low criticality that drives the frequency of maintenance

tasks. High critical valves are to be inspected every year. Medium critical valves are to be inspected every two to five years depending on the type of valve. Low critical valves are to be inspected every five to 10 years depending on the type of valve. All of these frequencies are defined in the Maintenance Tasks and Frequency Table. Future amendments to be considered may include:

- ◆ Guidelines and procedures for repair and replacement
- ◆ Equipment recommendations for valve operating

Prior to that time, a consistent program did not exist across PAWC—some water districts had formal programs for operating valves and others did not. Those that did operate and maintain valves recorded the size of valve operated and maintained on a yearly basis only. PAWC does not currently have a way of ensuring that all valves are operated and maintained at least once every X years. However, Schumaker & Company consultants were able to obtain some statistics for valve operations as shown in *Exhibit XI-16*.

Exhibit XI-16
PAWC Valve Operations
2003 to 2007

	2005		2006		2007	
	Target	Actual	Target	Actual	Target	Actual
Eastern PA: > or equal 16"	492	230	400	421	465	521
Eastern PA: < 16"	6,670	6,350	8,284	10,617	8,037	8,089
Western PA: > or equal 16"	185	187	189	276	383	475
Western PA: < 16"	10,091	5,700	9,454	9,142	10,035	9,875

Source: Information Response 714

It is our understanding that the valve operations and maintenance program is being built in to the computerized maintenance management program that is currently under development.

Recommendations

Recommendation XI-7 Investigate the reasons for the increase in overtime that has occurred in the Production Department. (Refer to Finding XI-15)

Overtime has increased significantly in eastern PA as summarized in *Exhibit XI-17*.

Exhibit XI-17
PAWC Production Overtime
2005 to 2007

Location	2005	2006	2007	Percent Increase	2005-2007 Increase
Western PA	8,058	8,233	8,002	-0.69%	-56
Eastern PA	8,944	14,773	13,995	56.47%	5,051
Total PA	17,002	23,006	21,997	29.38%	4,995

Source: *Exhibit XI-14*

Schumaker & Company consultants recognize that some level of overtime will always exist in a production or distribution area of a water utility. However, a significant increase on a year to year basis could indicate a significant understaffing situation. The increase from 2005 to 2007 in Eastern PA was 5,051 hours, has shown in *Exhibit XI-17*, which is almost the equivalent of 3 full-time equivalents (FTEs). Using overtime to cover these requirements results in a premium rate (time and a half), which results in additional costs to PAWC over having the additional FTE. In this case, this could be approximated at 5,000 hours X \$15 (time and half incremental) which would be \$75,000 annually.

PAWC has indicated that there may be some “issues” with the numbers provided for this analysis. These “issues” would appear to indicate that the percentage changes to be somewhat lower; however, Eastern PA overtime hours have still increased significantly. Therefore, Schumaker & Company believes that further investigation should be ongoing relative to overtime. We have estimated a \$75,000 potential benefit, recognizing that it might be difficult to achieve over many small water districts but within the data, some water districts (Wilkes-Barre) have incurred a 2,000 or greater swing in overtime year to year.

Recommendation XI-8 Implement standard systems for monitoring and reporting key statistical information in network operations. (Refer to Finding XI-1, Finding XI-14, and Finding XI-16.)

Schumaker & Company consultants understand that the current thinking at PAWC is to build some of this information and reporting into the CMMS that is being implemented on an American Water wide basis. In particular, hydrant flushing and valve operations are currently being built into the CMMS. We have reviewed the status of the pilot systems currently in place. The current schedule is that the CMMS will be implemented throughout PAWC water districts over the next several years starting with the Glen Alsace Water District.

From: Hunter, Stacy
Sent: Wednesday, October 28, 2009 4:50 PM
To: Daniels, Sandy
Subject: Electronic Filing: 43680

Importance: High

Your electronic filing has been accepted. The Administrative Law Judge assigned to this case has requested that two bound copies of the document containing tracking number Volume 1 and Volume 6 be sent to the IURC within two (2) business days of the electronic filing. Please provide a copy of the email that shows the electronic filing was accepted by the Commission. If you have any questions, please call the Document Center Coordinator at 317-232-2642.

*Stacy Hunter
Document Center Coordinator
Utility Regulatory Commission
101 W. Washington St., Suite 1500E
Indianapolis, Indiana 46204
317-232-2642*

From: Hunter, Stacy
Sent: Wednesday, October 28, 2009 10:25 AM
To: Daniels, Sandy
Subject: RE: 43680 Indiana-American - OUCC Testimony -- Volume 6 is attached

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From: Daniels, Sandy
Sent: Wednesday, October 28, 2009 10:25 AM
To: Hunter, Stacy
Subject: 43680 Indiana-American - OUCC Testimony -- Volume 6 is attached